INFLUENCES OF NEGATIVE EXTERNAL STRESSORS ON COGNITIVE PROCESSES WITHIN MARITAL RELATIONSHIPS

By

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A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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Traditionally, most research on relationship maintenance has focused on the effect of intrapersonal factors on relationship outcomes. What this perspective overlooks, however, is that part of maintaining a relationship involves navigating the negative stressors external to the relationship that may nevertheless strain the relationship. Consequently, the effects of intrapersonal factors on relationship outcomes may not be able to be fully understood without reference to the stressful circumstances surrounding the relationship. The goal of the current study was to examine the interplay between external stress and spouses' cognitive processes over the course of a continuing marriage. Newlywed couples reported on their stress and their relationship cognitions over the first 3½ years of marriage. Results confirmed the prediction that stress affects marital satisfaction through its effects on the content and organization of spouses' specific relationship perceptions. Within-subjects analyses revealed that increases in spouses' stress were associated with decreases in their marital satisfaction over time. Moreover,

spouses' cognitive content and cognitive organization seemed to mediate this effect. As spouses' external stress increased, they tended to report more specific problems within the relationship. Similarly, as spouses' stress increased, they also tended to organize their specific relationship perceptions in a less relationship-enhancing manner. Thus, external stress seems to lead to declines in satisfaction not only by providing spouses with more negative perceptions of the marriage, but also by affecting spouses' ability to subsequently cope with this increase in negative perceptions. Support for the prediction that each spouse's stress would interact to affect marital satisfaction was not found. When controlling for spouses' own stress, the stress experienced by the partner did not have an additional influence on spouses' satisfaction. Finally, some evidence suggested that spouses may become resilient against the effects of stress. Successfully coping with low stress was associated with less vulnerability to future stress. However, under high stress, a positive coping strategy did not protect spouses from the adverse affects of later stressors. Overall, the current findings suggest that a clear understanding of relationship maintenance and deterioration is limited without taking into account the broader circumstances surrounding the marriage to which couples must adapt.

INTRODUCTION

Marriages tend to begin happily, with both spouses expressing highly positive evaluations of each other and the relationship. Despite this early optimism, however, marriages today are more likely to end in separation or divorce than to continue (Bumpass, 1990). Thus, for many people, the course of a marriage is characterized by a shift in relationship beliefs, such that initially positive relationship beliefs deteriorate and transform into negative beliefs. How does this shift occur? In other words, how is it that some couples are able to maintain their initial feelings of satisfaction despite the challenges of a long-term relationship, whereas other couples are not?

Theories of close relationships indicate that the experience of change or stability in relationship satisfaction is, at its heart, a cognitive phenomenon. Though the development of a relationship is affected by a broad range of variables, from the enduring characteristics of each partner to the behaviors that partners exchange (Karney & Bradbury, 1995), these variables nevertheless tend to exert their influence on future outcomes through their effects on how individuals think about the relationship (Bradbury & Fincham, 1991; Karney, McNulty, & Frye, 2001). In other words, changes in intimates' global attitudes toward their relationship ultimately should stem from changes in the specific relationship beliefs that give rise to the overall relationship evaluation. Consequently, research on relationship maintenance and deterioration has focused a great deal of attention on cognitive processes within relationships. This research has demonstrated reliable links among particular cognitions (i.e., expectations, perceptions

of a partner, relationship memories) and relationship outcomes (Karney & Coombs, 2000; Knee, 1998; Murray, Holmes, & Griffin, 1996). Moreover, this literature has drawn attention to the way intimates integrate different levels of cognition to construct a global evaluation of the relationship. The organization of intimates' specific relationship beliefs has been shown to affect relationship quality independent of the content of those beliefs (Murray & Holmes, 1999; Neff & Karney, unpublished manuscript; Showers & Kevlyn, 1999). From this perspective, then, progress in understanding change and stability in relationship quality necessitates an accurate assessment of the content of intimates' relationship beliefs as well as the development of models of how intimates integrate those beliefs within an overall impression of the relationship.

This detailed attention to cognitive processes within relationships, however, draws attention away from the external context in which the relationship is embedded. Nevertheless, many aspects of the broader environmental context surrounding the marriage are likely to influence relationship quality and stability. In particular, the effects of intrapersonal factors on marriage may not be able to be fully understood without reference to the stressful circumstances and events to which couples must adapt (Karney & Bradbury, 1995). Research on stressful events, traditionally defined as events that challenge an individual's adaptive capacity (Cohen, Kessler, & Gordon, 1997), suggests that even the happiest couples will likely experience stressful events external to the relationship that may strain the marriage, despite the initial absence of difficulties within the relationship (Robinson & Jacobson, 1987). Theoretically, these stressful events may include any event that requires adaptation by the individual, regardless of whether the event is positive or negative. Empirical evidence, however, suggests that the adaptation to negative events taxes individuals in a way that positive events do not. While negative events have

been found to have clear, consistent patterns with psychological distress, findings with respect to positive events tend to be weak and contradictory (Turner & Wheaton, 1997). In other words, adapting to winning the lottery seems to be less of a challenge than adapting to the loss of a job. For this reason, research examining the influence of stress on marital quality has tended to focus on the impact of negative life events.

In fact, negative life events consistently have been associated with lowered marital adjustment (Lavee, McCubbin, & Olson, 1987; Whiffen & Gottlib, 1989). Marital instability tends to be higher among couples experiencing negative external stresses, such as financial difficulties (Bahr, 1979). Moreover, couples reporting more negative life events reap fewer long-term benefits from marital therapy than those not faced with such challenging circumstances (Jacobson, Schmaling, & Holtzworth-Munroe, 1987). Consequently, some of the antecedents of marital deterioration may stem from contextual, rather than intrapersonal influences. Yet, little is known about the mechanisms through which the external circumstances surrounding a marriage influence relationship outcomes over time (Bradbury, Cohan, & Karney, 1998; Karney & Bradbury, 1995). In other words, how do external stressful events affect processes internal to the relationship?

The goal of the current study was to address this gap between existing theories of relationship maintenance and research on stressful life circumstances. Specifically, this paper examines the interplay between negative external stress and cognitive processes within the relationship over the course of a continuing marriage. To accomplish this goal, the remainder of the introduction first reviews research demonstrating that stressful life events affect the satisfaction of both individuals within the relationship. We then attempt to tie this research to the broader literature on close relationship maintenance by proposing a mechanism through which stress may deteriorate relationship satisfaction.

Specifically, we suggest that external stress may affect relationship evaluations through its effects on both the content and the structure of intimates' specific relationship perceptions. Thus, external stress should provide intimates with more negative perceptions within the relationship. Furthermore, stress should prevent intimates from successfully coping with this increase in negative relationship content by hindering intimates' ability to re-organize their perceptions in a manner that would preserve their overall relationship satisfaction. Next, we take these ideas out of the context of the individual and place them within the relationship dyad by examining how the stress of each individual in the relationship may combine to affect intimates' cognitive processes. From here, we explore the possibility that stress may not always result in declines in satisfaction. Though most stress research has emphasized the harmful effects of stress, under some circumstances stress actually may serve to enhance rather than deteriorate relationship functioning. Finally, we describe a study designed to evaluate these ideas by examining the longitudinal effects of negative, external stressful events on intimates' relationship cognitions.

LITERATURE REVIEW

Stress and Relationship Quality

The general literature on stress frequently has examined the association between an individual's stress level and his or her personal well-being. Thus, this literature has sought to answer the question: How does exposure to stress influence an individual's thoughts and behaviors? Within the context of a romantic relationship, however, intimates' thoughts and behaviors tend to affect the thoughts and behaviors of their relationship partners. As a result, the external stressors experienced by one individual are likely to create circumstances that will influence each individual within the relationship (O'Brien & DeLongis, 1997). Considering the perspective of both the individual and the relationship partner thus broadens the original question. Within a relationship, the question becomes: How does stress influence the relationship functioning of the individual *and* how does the stress experienced by one individual influence the relationship functioning of the spouse? As a result of this broader question, theory and research geared toward explaining the association between stress and relationship well-being has grown to include the perspective of both individuals in a relationship through the study of two distinct, yet related phenomena. The first phenomenon, known as *stress spillover*, refers to a situation in which the stress generated in one setting affects the thoughts and behaviors of an individual within a different setting (Bolger, DeLongis, Kessler, & Wethington, 1989; Repetti & Wood, 1997). Thus, stress spillover suggests that individuals' external stressful experiences may affect their *own* judgments of

their relationships. The second phenomenon, known as *stress crossover* or emotional transmission, refers to a situation in which the stress being experienced by one individual leads to heightened distress in the partner (Larson & Almeida, 1999). Stress crossover, then, suggests that individuals' external stressful experiences may affect their *partners'* judgments of the relationship. The next section addresses each of these processes in greater detail.

Stress and the Individual: Spillover Effects

Two lines of research suggest that stressful life events external to the relationship may spill over to affect an individual's functioning within the relationship. First, increases in stress consistently have been associated with changes in relationship behaviors. For instance, a common response to job stress appears to be social withdrawal (Repetti & Wood, 1997). A study of male air traffic controllers' daily work stress revealed that both the air traffic controllers and their wives described the husbands' behavior as more withdrawn after work shifts that husbands described as busier and more difficult than after work shifts that were relatively stress free (Repetti, 1989). Specifically, under higher levels of work stress, individuals tend to reduce their involvement at home by engaging in fewer household tasks and fewer leisure activities (Bolger et al., 1989; Crouter, Perry-Jenkins, Huston, & Crawford, 1989). This withdrawal coping response, however, tends only to occur when spouses support this behavior (Repetti, 1989). When withdrawal is not facilitated, the experience of stress in the workplace may give rise to negative interactions at home. Husbands in blue-collar occupations display more negative affect in their marital interactions than do husbands in white-collar occupations (Krokoff, Gottman, & Roy, 1988). This association was nonsignificant when controlling for job distress, suggesting that stressful working

conditions rather than status influenced these behaviors. In addition, arguments in the home are more likely to be reported on days in which individuals report more distressing encounters with coworkers and supervisors (Bolger et al., 1989; Repetti & Wood, 1997).

Second, increases in stress have been directly associated with diminished relationship evaluations. Individuals' work stress has been linked to less accepting views of family members (Crouter & Bumpus, 2001). Moreover, the accumulation of external stressors negatively affects not only concurrent but also future judgments of relationship satisfaction (Bodenmann, 1997). However, recent evidence suggests a more complex association between stressful life events and relationship satisfaction. In a series of studies, Tesser and Beach (1998) examined the between-subjects association between negative life events and relationship satisfaction. Results revealed that as the number of negative life events experienced increased from low to moderate, stress spillover occurred, such that individuals also reported increasingly negative perceptions of their relationship. Interestingly, however, under moderate levels of stress, negative life events did not seem to reflect on individuals' relationships. Rather, under moderate stress, individuals seemed to prevent their stressful experiences from spilling over into their relationship judgments, resulting in a jump in relationship satisfaction. As negative life events continued to accumulate beyond this point, though, increases in stress again were associated with lowered relationship satisfaction. To explain these findings, Tesser and Beach (1998) postulate that under conditions of moderate stress, individuals may become aware of the possibility that their stress is contaminating their relationship judgments. As a result of this awareness, individuals will attempt to discount their feelings of stress when making their relationship evaluations, thereby minimizing stress spillover. This discounting, however, is assumed to be an effortful process. Consequently, when stress

levels are high, individuals' stress may tax their cognitive resources, thereby overwhelming their ability to separate their stress from their satisfaction (e.g., Martin, Seta, & Crelia, 1990). As a result, increased stress spillover occurs. In other words, when individuals are aware of their stress and possess the cognitive capacity to do so, they may be able to nullify the influence of their stress on their relationship evaluations.

Stress and the Partner: Crossover Effects

In addition to affecting one's own thoughts and behaviors, the stressful life events of one individual may lead to changes in the emotions and behaviors of significant others (Larson & Almeida, 1999). For instance, in one study, independent observers rated children's affect as increasingly dysphoric on days in which their mothers reported experiencing higher levels of work stress (Repetti & Wood, 1997). Similarly, mothers' anxiety predicts the subsequent anxiety of their adolescent children even when controlling for adolescents' initial levels of anxiety. This transmission of anxiety from mother to child was particularly likely when mothers were under higher levels of stress (Larson & Gillman, 1999).

As seen in stress spillover research, however, in some situations individuals may succeed in limiting the negative influences of stress. Downey and colleagues (Downey, Purdie, & Schaffer-Neitz, 1999) found that mothers suffering from chronic pain report experiencing higher distress and more anger than a sample of control mothers without chronic pain. However, the within-day correspondence between mother's anger and child's anger was significantly lower in families coping with chronic pain, relative to the control families. In other words, the anger experienced by mothers with chronic pain was less likely to affect the anger of their children than was the anger experienced by the

control mothers, even though these control mothers reported lower overall levels of anger.

Similar findings were found in a study of romantic relationships in which one partner was preparing for the bar exam. Thompson and Bolger (1999) measured the examinees' mood as well as their partners' feelings about the relationship for the 35 days preceding and immediately after the exam. Prior to the exam, the examinee's depressed mood led to a subsequent reduction in positive feelings about the relationship in the partner. However, as the day of the exam drew closer and examinees' distress reached its highest level, this association no longer remained significant. In fact, on the day immediately before the exam, the association between examinees' mood and partners' relationship evaluations was essentially zero. Thus, partners seemingly made allowances for the examinee's distress by tolerating negative emotions they did not previously tolerate. Together with the previous study, these findings imply that when an individual clearly may attribute the source of a partner's distress to the stressful situation, the individual may not react as strongly to the partner's distress as he or she otherwise would, thereby preventing stress crossover effects (Thompson & Bolger, 1999).

Critique of the Literature on Stress and Relationship Well-Being

Together, research on stress spillover and stress crossover argues that stressful life circumstances external to the relationship frequently affect couples' thoughts and behaviors within the relationship. Nevertheless, our understanding of the complex interplay between external events and internal relationship processes is hindered by three major limitations of this research. First, the current literature is limited by its focus on describing rather than explaining the spillover/crossover phenomena. Most of the stress literature simply delineates *when* spillover or crossover occurs without regard for *how* it

occurs. An emerging theme from the stress literature is that when the source of a negative emotion is attributable to a justified cause and individuals possess the cognitive capacity to do so, individuals may think and act in ways that prevent stress from influencing their relationship evaluations. How, then, do individuals successfully protect their relationship evaluations from the influence of external stress? Moreover, what happens when stress overwhelms this ability to protect relationship satisfaction? In other words, how does relationship satisfaction ultimately break down in the face of stress? The answers to these questions have yet to be examined directly. Consequently, there is a gap between theory and research preventing a more thorough understanding of the mechanisms underlying stress spillover and crossover processes.

A second limitation concerns a failure to examine how the external circumstances of the relationship partner may influence stress crossover processes. By definition, relationships involve dyadic processes. Thus, the factors each individual brings to a relationship should combine to influence relationship outcomes. For instance, as previously mentioned, spouses may not be affected by their partners' stress if they are able to attribute their partners' behavior to the stressor (Thompson & Bolger, 1999). However, if spouses are experiencing high levels of stress themselves, they may lack the cognitive resources to discount their partners' distress in this manner (Tesser & Beach, 1998). Thus, the manner in which spouses' stress levels interact to affect each individual's relationship well-being warrants further attention.

Though also an important strength of the current research, a final limitation of the stress spillover and crossover literature is the almost exclusive reliance on daily diary methods. Daily diaries have advanced the understanding of spillover/crossover processes by allowing for the within-subjects examination of the association between stress and

well-being. This methodology controls for numerous extraneous variables, such as personality or general response tendencies, by examining changes in an individual's relationship functioning according to whether the person is experiencing more or less stress than usual. However, as daily diary data is difficult to obtain, current research has examined only the short-term longitudinal consequences (e.g., several days to one month) of stress for relationship well-being. Given that systematic changes in satisfaction occur over years rather than days, a broader perspective is necessary to investigate how external stress may be linked to the deterioration of relationship well-being over the course of a long-term marriage.

Overall, the existing stress research leaves three important unanswered questions concerning the interplay between external stress and relationship well-being. First, through what mechanism does stress affect relationship satisfaction? Second, how do spouses' stress experiences interact to produce relationship outcomes? Finally, how is stress linked to satisfaction over time? The remainder of the introduction examines each of these three questions in greater detail.

The Mechanisms Underlying Stress and Declines in Relationship Satisfaction

The first limitation of the stress spillover/crossover literature is a lack of understanding concerning how stressful life events produce changes in intimates' satisfaction. Traditionally, research on stress and relationship well-being has been conducted without regard for the existing theories on relationship development. Linking stress research to the broader literature on relationship maintenance and deterioration suggests a mechanism through which stressors external to the relationship may influence judgments of satisfaction within the relationship. As mentioned, this literature argues that change or stability in relationship satisfaction ultimately is the result of changes in

intimates' cognitive processes within the relationship. In particular, relationship satisfaction appears to be shaped both by what intimates believe about their relationships as well as by how those relationship perceptions are integrated within an overall representation of the relationship (Karney, McNulty, & Frye, 2001). Clearly, possessing a large number of positive relationship beliefs is associated with higher relationship satisfaction (Murray, Holmes, & Griffin, 1996). Nevertheless, all couples tend to acknowledge some specific problems or disappointments in their relationships (McNulty & Karney, 2001). Maintaining satisfaction over the course of a continuing relationship, then, requires that intimates resolve their positive global evaluation of the relationship with the negative specific beliefs and experiences that inevitably arise. The difference between satisfaction that endures and satisfaction that declines may lie in the different ways that this process of reconciliation can take place (Murray & Holmes, 1999; Neff & Karney, unpublished manuscript; Showers & Kevlyn, 1999). When a specific relationship perception is positive, linking that perception to the global evaluation of the relationship will likely promote satisfaction. However, when a specific perception is negative, linking that perception to the global evaluation will likely result in a deterioration of relationship satisfaction. In other words, any cognitive organization that serves to separate specific negative perceptions from the broader positive view of the relationship enhances relationship outcomes.

This perspective on relationship development implies there may be two general routes to declines in satisfaction. The first route involves a change in intimates' cognitive content. As the number of negative relationship perceptions increases, structurally re-organizing those beliefs may no longer protect judgments of satisfaction from the implications of the beliefs, leading to lower satisfaction. The second route involves a

change in intimates' cognitive structure. Intimates may experience a deterioration of the ability to re-organize their specific relationship perceptions in a manner that would serve to enhance their relationship satisfaction.

The current study argues that stress influences each of these paths of relationship decline. Stressful life circumstances should affect the content of intimates' relationship beliefs by increasing the number of negative perceptions intimates hold about their relationship. Perhaps more importantly, however, stressful life circumstances should affect the structure of intimates' beliefs by hindering intimates' ability to organize their beliefs in a relationship-enhancing fashion. In other words, the experience of external stressors should provide individuals with more negativity to deal with in the relationship as well as affect individuals' ability to subsequently cope with this increase in negative relationship perceptions. The following sections describe hypotheses derived from this general framework.

Stress and Cognitive Content

The first premise of this study was that increases in stressful life events would negatively affect the content of intimates' specific relationship perceptions. Frequently, satisfied intimates are rather enhancing in their overall impressions of their relationships, even describing their relationships as ideal (Ruvulo & Veroff, 1997). This positive bias, however, does not seem to extend to intimates' perceptions of specific aspects of the relationship (Neff & Karney, in press). Unlike global impressions, which allow intimates to choose from a wide range of specific examples to justify a positive self-view, specific aspects of the relationship tend to be defined more concretely, and thus restrict intimates' flexibility to justify a desired belief (Dunning, Meyerowitz, & Holzberg, 1989). Consequently, specific relationship perceptions tend to be responsive to the reality of an

individual's experiences in a way that global impressions are not. For instance, if communications within the relationship become increasingly abrupt and critical, intimates will likely begin to hold the negative specific belief that their communication skills are suffering. Evidence from a daily diary study of satisfied newlywed couples supports this idea (McNulty & Karney, 2001). This study revealed that spouses' specific perceptions of the marriage tended to be less positive and more likely to fluctuate from day to day than spouses' global perceptions, suggesting that changes in daily experiences may be associated with changes in specific relationship beliefs. Thus, an increase in negative experiences within the relationship should lead to an accumulation of negative relationship perceptions, thereby resulting in the eventual deterioration of relationship satisfaction.

The first goal of the study, then, was to examine the role of cognitive content in the stress spillover process. Our first hypothesis was that stress should contribute to the deterioration of satisfaction through its effects on spouses' specific relationship perceptions. Replicating previous work on stress spillover, we first predicted that increases in spouses' external stressful life circumstances should be associated with corresponding decreases in their marital satisfaction over time (Hypothesis 1a).

Second, we predicted that specific relationship perceptions would mediate this expected stress spillover effect (Hypothesis 1b). Namely, given that stress should provide spouses with increased negative experiences within the relationship, increases in spouses' external stressful life circumstances should be accompanied by corresponding increases in the negativity of spouses' specific relationship perceptions. This association was expected to account for the association between stress and global satisfaction.

Stress and Cognitive Structure

The second premise of the study was that stressful life events would influence the manner in which intimates organize and integrate their specific relationship perceptions. Growing evidence suggests that intimates who evaluate their relationships positively or negatively at the global level may not differ in the content of their specific relationship perceptions, but rather in the way those perceptions are integrated. This research demonstrates that the ability to organize relationship cognitions in a manner that limits the influence of specific negative beliefs on the global relationship evaluation, allows satisfaction to remain high, despite the presence of these negative perceptions (Murray & Holmes, 1999; Neff & Karney, unpublished manuscript; Showers & Kevlyn, 1999).

Intimates may reduce the impact of their negative specific perceptions on relationship satisfaction using a variety of organizational techniques. For instance, intimates may attribute great importance to their positive specific perceptions, while dismissing the importance of their negative specific perceptions. This process of differentially weighing positive and negative beliefs, or differential importance, ensures that positive beliefs will contribute more to overall satisfaction than negative beliefs (Neff & Karney, unpublished manuscript; Pelham & Swann, 1989). Similarly, intimates may integrate specific beliefs with a global evaluation through the use of causal attributions. Attributing a partner's relationship transgressions to temporary or external causes in effect weakens the link between this specific negative perception and global relationship satisfaction (Holzworth-Munroe & Jacobson, 1989). In other words, any organization that serves to weaken the link between the global relationship evaluation and specific negative perceptions contributes to the maintenance of relationship quality.

In fact, individuals' cognitive organization may represent a strategic response to negative experiences. Research on the self-concept shows that though individuals report an increase in negative self-views when in a negative mood, they will attempt to counteract this negativity by altering the structure of their self-views (Showers, Abramson, & Hogan, 1998). Similarly, a longitudinal study of differential importance in marriage demonstrated that intimates' specific relationship perceptions were changing significantly over the course of the marriage. Among satisfied spouses, however, those fluctuations in specific relationship perceptions were accompanied by corresponding changes in the importance of those perceptions. Specifically, spouses who maintained flexible cognitive structures, such that positive perceptions were always viewed as more important than negative perceptions despite any changes in the content of those perceptions, exhibited more stable levels of satisfaction over the first 2 ½ years of marriage (Neff & Karney, unpublished manuscript). Thus, whereas changes in the content of intimates' beliefs may reflect intimates' objective experience within the relationship, changes in cognitive structure may signify intimates' attempt to cope with those changing experiences.

This coping response to negative perceptions within the relationship, however, may be adversely affected by increases in the stressful life circumstances outside the relationship. Previous research has shown that cognitive organization may buffer individual's well-being from the negative effects of stress (Linville, 1987; Showers & Kling, 1996). Nevertheless, the experience of a number of stressful events also may tax intimates' energy and cognitive resources, thereby leaving intimates with fewer resources to handle successfully their negative relationship beliefs (e.g., McCubbin & Patterson, 1983). As a result, intimates' information processing within the relationship may be

simplified when they are distracted by external stress (Hammond, 2000). Evidence suggests that if individuals are devoting energy to other tasks while making evaluations, they are less likely to partial out extraneous influences from those judgments (Martin et al., 1990). For instance, individuals primed with irrelevant negative information will judge a target other more negatively if they are distracted during the rating process than if they are not distracted (Martin et al., 1990). Distracted individuals also tend not to correct for situational influences when judging the behavior of others, instead relying on dispositional attributions of behavior (Gilbert, Pelham, & Krull, 1988). Thus, to the extent that maintaining a relationship-enhancing cognitive organization requires cognitive effort, individuals may find it difficult to separate their specific negative perceptions from their global relationship satisfaction while also attempting to manage high levels of external stress.

The second goal of the study, then, was to examine the role of cognitive structure in the stress spillover process. Our second hypothesis was that stress should contribute to the deterioration of satisfaction through its effects on the organization of spouses' specific relationship perceptions. As previously discussed, increases in stress should be accompanied by increases in negative relationship perceptions. However, under low to moderate levels of external stress, intimates may retain the resources necessary to cope successfully with these negative relationship perceptions. In other words, low to moderate stress should be associated with a relationship-enhancing cognitive structure, such that positive perceptions are more closely linked to the global evaluation than are negative perceptions. In fact, prior research demonstrates that cognitive organization effects are strongest when the content of beliefs is somewhat negative (Showers et al., 1998). Thus, the relationship-enhancing nature of intimates' cognitive organization

actually may increase as stress increases from low to moderate and intimates have more negativity to cope with in the relationship. Under these conditions, then, stress spillover should be low. On the contrary, as the number of external life stressors continues to grow larger, intimates may find themselves overwhelmed by their stress. Conditions of high stress may deplete intimates' cognitive resources and thus interfere with intimates' ability to organize their relationship perceptions in a relationship-enhancing manner. Consequently, as stress increases from moderate to high, the relationship-enhancing nature of spouses' cognitive organization may decrease, resulting in greater stress spillover.

Consequently, we predicted that fluctuations in spouses' stress would be associated with fluctuations in their cognitive organization over time, independent of changes in cognitive content (Hypothesis 2a). Specifically, external stress was expected to be curvilinearly related to spouses' cognitive organization. Furthermore, we predicted that spouses' organization of their specific relationship perceptions also would mediate the association between stress and overall satisfaction (Hypothesis 2b).

Incorporating the Dyad: Additive and Interactive Effects of Intimates' Stress

A second limitation of the stress spillover/crossover literature is the lack of attention given to the possible additive and interactive effects of each spouse's stress on relationship evaluations. Previous research has argued that spouses' external stress not only may affect their own relationship judgments, but also may affect the relationship judgments of their partners. However, this research has examined the stress crossover effect without regard to the stressful circumstances surrounding the relationship partner. Nevertheless, the understanding of stress crossover effects is likely to be complicated by the fact that intimates' stress may interact with their partners' stress to produce changes

in partners' satisfaction. In other words, we predict that intimates' stress will affect the way their partners think about the relationship. Yet, the influence of intimates' stress on their partners' relationship cognitions should depend on the amount of stress that partners are experiencing themselves.

For instance, an increase in a spouse's stress should be associated with an increase in the number of negative relationship perceptions held by the partner. However, the partner's own stress level should moderate this effect. Namely, if John is under high stress and thus likely to behave poorly in the relationship, Jane should experience an increase in her negative relationship perceptions. If Jane is also under high levels of stress, though, she may be more likely to reciprocate this negativity. Thus, both John's stress and Jane's stress should work to contribute to Jane's negative relationship perceptions.

Similarly, partners' own stress level should influence how they cope with the increase in negative relationship perceptions brought about by their spouses' stress. When intimates' stress is high, yet their partners' stress is low, partners should have the cognitive resources at their disposal to make allowances for intimates' negativity. For instance, if Jane is experiencing low stress, she should be able to cope successfully with the increase in negative perceptions caused by John's stress by separating those perceptions from her satisfaction. As a result, when intimates' stress is high and partners' stress is low, stress crossover should be low. However, if partners are also faced with high levels of stress, they may find themselves unable to accomplish the cognitive reorganization needed to preserve their satisfaction. In other words, if Jane is also under high stress, she may lack the resources necessary to maintain a relationship-enhancing

cognitive organization. Thus, when intimates' stress is high and their partners' stress is high, stress crossover should also be high.

Importantly, however, intimates' stress levels should not directly affect their partners' cognitive organization. Namely, intimates' stress should have little influence on the cognitive resources partners have to re-organize their specific relationship perceptions. Thus, unlike the influence of stress on cognitive content, intimates' stress should not interact with their partners' stress to produce changes in partners' cognitive organization. Rather, partners' own stress should influence their own ability to cope with negative perceptions in the relationship, which in turn should moderate the effect of their spouses' stress on their relationship satisfaction.

The third goal of the study, then, was to examine the role of the partner's own stress in the stress crossover process. Specifically, our third hypothesis was that partners' own stressful experiences would moderate the association between spouses' stress level and partners' relationship satisfaction. Replicating previous work on stress crossover, we first predicted that increases in spouses' external stressful life circumstances would be associated with corresponding decreases in their partners' marital satisfaction over time (Hypothesis 3a). In addition, we predicted that partners' own stress should moderate this stress crossover effect, such that when partners' own stress is low, stress crossover should be low. However, when partners are also experiencing high levels of external stress, stress crossover should be high (Hypothesis 3b).

Parallel to Hypothesis 1b, we also predicted that partners' specific relationship perceptions would mediate the expected stress crossover process (Hypothesis 3c). In other words, spouses' stress should contribute to the deterioration of their partners' satisfaction through its effects on partners' specific relationship perceptions. Moreover,

we predicted that the partner's own stress should moderate the association between partners' specific relationship perceptions and their spouses' stressful life circumstances (Hypothesis 3d). In other words, the interaction of each individual's stress should produce even greater increases in the number of negative perceptions held by the relationship partner.

Turning to the role of cognitive organization in the stress crossover process, we hypothesized that changes in spouses' stressful life circumstances would not be directly associated with changes in their partners' cognitive structures (Hypothesis 3e). Namely, spouses' stress should have no direct effects on their partners' ability to cope with negative specific perceptions within the relationship. Rather, as hypothesized earlier, partners' own stress level should influence their cognitive organization (see Hypothesis 2b). Consequently, partners' own stress was expected to influence the stress crossover process through its effects on partners' cognitive organization. Specifically, partners' cognitive organization should moderate the association between spouses' stressful life circumstances and partners' relationship satisfaction (Hypothesis 3f). In other words, stress crossover should be highest when partners' cognitive organization is more negative.

Is Stress Always Bad? Stressful life Events and Longitudinal Outcomes

A third limitation of the stress spillover/stress crossover literature is a lack of longitudinal research investigating the effects of stress spillover and crossover over the course of a long-term relationship. Daily diary studies indicate that the short-term effects of stress on relationship functioning tend to be negative. These findings, then, imply that stress will be detrimental to relationship quality over time. However, is this always the case? This perspective on stress and relationship well-being fails to account for why

some relationships may emerge from stressful experiences relatively unscathed, while other relationships crumble in the face of such hardships. Longitudinal research is necessary to determine the ultimate effects of stressful life events on future relationship outcomes.

In fact, some theories of stress have begun to shift away from an emphasis on the harmful effects of stress toward a focus on the potential of stress to actually *enhance* individuals' well-being. Stressful life events can provide opportunities for growth by promoting new coping skills or mobilizing previously untapped personal and social resources (Holahan & Moos, 1990; McCubbin & Patterson, 1983). As a result, individuals who are exposed to stressful experiences and cope with them effectively may develop a resilience to future stress (Holahan & Moos, 1990). In other words, successful adaptation to a stressful event should stimulate positive changes and contribute to improved functioning after the stressor by strengthening the individual's coping resources, making the successful adaptation to future stressors more likely (McCubbin & Patterson, 1983).

Empirical evidence for the positive effects of stressful experiences is growing. Studies of daily stress have revealed that individuals report a more positive mood on the day following a stressful event than on other stress-free days (Bolger, DeLongis, Kessler, & Schilling, 1989; DeLongis, Folkman & Lazarus, 1988). This effect is particularly strong when individuals receive high levels of social support for the event (Caspi, Bolger, & Eckenrode, 1987). Moreover, individuals who behave adaptively under conditions of high stress have shown an increase in resources, such as improved family support and reduced family conflict, one year later (Holahan & Moos, 1990). Together, this research suggests that successfully coping with a stressor should lead to more success in

surmounting stressful experiences in the future. Nevertheless, this assumption of the stress resilience literature has not been studied directly.

The fourth and final goal of the study, then, was to examine whether intimates' responses to stressful life events encountered early in the relationship affect their future relationship functioning. Our fourth hypothesis was that intimates who successfully cope with stress by preventing their stressful life experiences from spilling over into their relationship satisfaction may emerge from the experience as less susceptible to the adverse effects of later stressors. Specifically, we first predicted that spouses who maintain a positive organization of relationship perceptions in the face of external stress would be less vulnerable to future declines in relationship satisfaction (Hypothesis 4a). In other words, spouses who experience stress early in the relationship and respond effectively to that stress should maintain more stable levels of satisfaction over time. Moreover, we predicted that spouses who maintain a positive organization of relationship perceptions in the face of external stress early in the relationship would be less vulnerable to future stress spillover effects (Hypothesis 4b). In other words, spouses who experience stress early in the relationship and respond effectively to that stress should demonstrate lower levels of stress spillover over time.

We also predicted that successful coping early in the relationship should serve to bolster intimates' ability to successfully cope with stress in the future (Hypothesis 4c). Intimates who counteract the influence of stress by separating their negative relationship perceptions from their overall satisfaction should emerge from the stressful experience with a positive cognitive organization. As a result, the experience of stress will serve to augment intimates' future coping resources, thereby enhancing their probability of surmounting future stressors. By the same token, intimates who fail to successfully cope

with their negative specific relationship perceptions in the face of stress will emerge with a weakened cognitive organization. In this case, the experience of stress will serve to deteriorate intimates' coping resources, rendering them unlikely to adapt successfully to other stressors. Thus, successful coping should be associated with better coping in the future.

Overview of Current Study

The current study attempted to address the limitations of the existing literature on external stress and relationship evaluations by examining the influence of stressful life events on cognitive processing within the relationship over the course of a continuing marriage. First-married, newlywed couples participating in a broader study of marital development provided information concerning their stressful experiences, their specific relationship perceptions, and their overall relationship satisfaction every six months over the first 3 ½ years of their marriage. To ensure that the results of the study were not unique to a single method of assessing a construct, several variables in the study were assessed using multiple measures.

The use of a fairly homogenous sample of newlywed couples provided several advantages. First, this sample allows us to distinguish between the initial onset of marital dissatisfaction and the continuing course of marital dissatisfaction (Bradbury, 1998). In samples that vary in their marital duration, a decline in satisfaction may represent the beginning of marital difficulties or the further deterioration of the marriage. The study of newlyweds, on the other hand, enables research to clarify the origins of marital instability. Second, newlywed couples are an appropriate sample in which to examine issues of change and stability. Compared to more established marriages, newlyweds experience more dramatic changes in relationship quality and are at elevated risk of

marital disruption (Bradbury, 1998; Cherlin, 1992). Similarly, couples in the early years of marriage may be more likely to be exposed to a variety of stressful life events, as a number of external stressors tend to accompany the transition to marriage (e.g., relocation, starting a new job).

Evaluating the role of external stressful life circumstances on cognitive processing within the relationship requires attention to two important methodological issues. The first issue involves the use of between-subjects versus within-subjects designs. Previous research has utilized both types of designs when examining the association between stress and relationship quality. However, it is important to recognize that these designs address distinct questions. Between-subjects designs examine how stressed versus non-stressed couples differ in their relationship functioning. Within-subjects designs, on the other hand, provide a more precise examination of stress effects by investigating how changes in stress influence an individual's relationship functioning over time, while controlling for the individual's average relationship functioning. The current study, then, addressed all questions at the within-subjects level.

The second methodological issue involves the distinction between chronic and acute stress. By definition, chronic stress refers to a stable stressor experienced over an extended duration of time, such as living in a dangerous neighborhood or having a low income. Conversely, acute stress refers to stressful events that occur at one point in time and have a clear onset and offset, such as a temporarily heavy workload or a personal injury. Unlike chronic stress, which tends to remain constant over long periods of time, acute stress is likely to vary substantially over time, and thus seems particularly suited for examining the types of questions associated with within-subjects designs. Given that the current study intended to examine whether variations in spouses' stress are associated

with variations in spouses' cognitive processing, the current study relied on measures of acute stress rather than of chronic stress.

Review of Hypotheses

Hypothesis 1

Our first hypothesis was that stress should contribute to the deterioration of marital satisfaction through its effects on spouses' specific relationship perceptions.

Hypothesis 1a. Over time, fluctuations in spouses' stressful life circumstances should be accompanied by corresponding changes in their marital satisfaction, controlling for spouses' average level of marital satisfaction. Thus, this hypothesis tested for stress spillover.

Hypothesis 1b. Increases in spouses' stressful life circumstances should also be associated with increases in the negativity of spouses' specific relationship perceptions over time. This association was expected to mediate the stress spillover effect.

Hypothesis 2

Our second hypothesis was that stress should contribute to the deterioration of marital satisfaction through its effects on the organization of spouses' specific relationship perceptions.

Hypothesis 2a. Over time, fluctuations in spouses' stressful life circumstances should be accompanied by changes in their cognitive organization, controlling for spouses' average level of cognitive organization and for changes in spouses' cognitive content. Specifically, we predicted that the association between spouses' stress and their cognitive organization would be curvilinear.

Hypothesis 2b. Spouses' cognitive organization should mediate the stress spillover effect.

Hypothesis 3

Our third hypothesis was that partners' own stressful experiences would moderate the association between spouses' stress level and partners' relationship satisfaction.

Hypothesis 3a. Parallel to Hypothesis 1a, over time fluctuations in spouses' external stressful life circumstances should be accompanied by corresponding changes in their partners' marital satisfaction. Thus, this hypothesis tested for stress crossover.

Hypothesis 3b. Partners' own stress should moderate the association between partners' overall satisfaction and their spouses' stressful circumstances. Namely, stress crossover should be greatest when partners also are experiencing high levels of stress.

Hypothesis 3c. Parallel to Hypothesis 1b, increases in spouses' stressful life circumstances should also be associated with increases in the negativity of their partners' specific relationship perceptions over time. This association was expected mediate the stress crossover effect.

Hypothesis 3d. Partners' own stress should moderate the association between partners' specific relationship perceptions and their spouses' stressful life circumstances. Namely, spouses' stress should lead to the greatest increase in the negativity of their partners' specific perceptions when partners are experiencing high levels of stress.

Hypothesis 3e. Spouses' stress level should not influence their partners' ability to cope with negative specific relationship perceptions. Thus, changes in spouses' stressful circumstances should not be associated with changes in their partners' cognitive organization.

Hypothesis 3f. Partners' own stress was expected to influence the stress crossover process through its effects on partners' cognitive organization. Specifically, partners' cognitive organization should moderate the association between spouses'

stressful life circumstances and partners' relationship satisfaction. In other words, stress crossover should be greatest when partners maintain a less relationship-enhancing organization of their specific relationship perceptions.

Hypothesis 4

Our fourth hypothesis was that intimates who successfully cope with stressors early in the relationship by preventing their stressful life experiences from spilling over into their relationship satisfaction should exhibit resilience to future stressors.

Hypothesis 4a. Spouses who are able to maintain a positive cognitive organization in the face of stressors encountered early in the relationship should exhibit more stable levels of marital satisfaction over time.

Hypothesis 4b. Spouses who are able to maintain a positive cognitive organization in the face of stressors encountered early in the relationship should exhibit lower levels of stress spillover over time.

Hypothesis 4c. Spouses who are able to maintain a positive cognitive organization when faced with stress early in the relationship should exhibit a more positive cognitive organization in the face of stressors encountered later in the relationship.

METHOD

Participants

Newlywed couples were recruited for this study using two methods. First, advertisements were placed in community newspapers and bridal shops, offering up to $300 to couples willing to participate in a study of the early years of marriage. Second, letters were sent to couples who had applied for marriage licenses in Alachua County, Florida. Couples responding to either method of solicitation were screened in a telephone interview to determine whether they met the following criteria: (a) this was the first marriage for each partner, (b) the couple had been married less than 6 months, (c) neither partner had children, (d) each partner was at least 18 years of age and wives were less than 35 years of age (to allow that all couples were capable of conceiving children over the course of the study), (e) each partner spoke English and had completed at least 10 years of education (to ensure comprehension of the questionnaires), and (f) the couple had no immediate plans to move away from the area. The final sample consisted of 82 couples. Analyses revealed no significant differences in age or years of education between couples recruited through the different types of solicitations.

On average, husbands were 25.1 (SD = 3.3) years old, and had received 16.3 (SD = 2.4) years of education. Forty percent were employed full time and 54% were full time students. Wives averaged 23.7 (SD = 2.8) years old and had received 16.3 (SD = 1.2) years of education. Thirty-nine percent were employed full time, and 50% were full time students. Slightly over 70% of the sample was Christian (over 45% were Protestant) and

83% of husbands and 89% of wives were white. The average combined income of couples was less than $20,000 per year.

Procedure

Couples meeting eligibility requirements were scheduled to attend a 3-hour laboratory session. Before the session, they were mailed a packet of questionnaires to complete at home and bring with them to their appointment. This packet contained self-report measures of stress and of relationship perceptions as well as a letter instructing couples to complete all questionnaires independently of one another.

Every six months following the initial assessment, couples were contacted by phone and mailed additional packets of questionnaires along with postage-paid return envelopes and a letter of instruction reminding couples to complete all forms independently of one another. Couples were paid $25 to continue participating at each follow-up. This study will examine seven waves of data, covering approximately the first 3 ½ years of marriage. At Time 7, the final wave of data collection described here, 66 couples were still married, eight couples had divorced, and eight couples had withdrawn from the study. Of the 66 couples who were still married and participating in the study, 54 couples (82.0%) returned completed packets at Time 7. This slight attrition over time, however, should not affect the results presented here as all analyses relied on growth curve modeling. One advantage of growth curve modeling is that this type of analysis includes both participants providing full data as well as those participants who did not provide a full seven waves of data. All subsequent analyses, then, are based on data from all 82 couples.

Materials

Global Marital Satisfaction

Most frequently administered measures of relationship satisfaction (e.g., the Marital Adjustment Test; Locke & Wallace, 1959) include items that assess intimates' global relationship evaluations as well as items assessing perceptions of specific aspects of the relationship (e.g., evaluation of communication skills). To ensure that global and specific ratings were not confounded in the present study, marital satisfaction was measured using a 15-item version of the Semantic Differential (SMD; Osgood, Suci, & Tannenbaum, 1957; see Appendix A) that assessed global evaluations of the relationship exclusively. At each time point, spouses were asked to indicate their current feelings about their marriage on 7-point scales between two opposing adjectives (e.g., "satisfied-dissatisfied," "unpleasant-pleasant," "rewarding-disappointing,"). Scores on the measure can range from 15 to 105, with higher scores indicating higher satisfaction. The internal consistency of the measure was high across all seven waves of data collection, ranging from .91 to .98 for husbands and from .93 to .98 for wives.

Specific Relationship Perceptions

Spouses' specific perceptions of the relationship were assessed at each time point using the Marital Problems Inventory (MPI; Geiss & O'Leary, 1981; see Appendix B). The measure lists nineteen potential problem areas in a marriage (e.g., trust, communication, household management) and asks participants to rate each item on a scale from 1 ("not a problem") to 11 ("major problem"). Of the nineteen areas of difficulty included on the original measure, we selected only those problems that are internal to the relationship to be included in the final composite score. Thus, the following items were not included in the composite score as these items may represent

external stressors on the relationship: in-laws, parents, relatives; recreation and leisure time; friends, money management; drugs and alcohol; career decisions; and amount of time spent together. The remaining twelve items were summed to form an index of the negativity of spouses' specific relationship perceptions. Composite scores can range from 12 to 132, with higher scores representing more negative perceptions of the relationship. Internal consistency of the measure was high across all seven waves of data collection, ranging from .85 to .92 for both husbands and wives.

Cognitive Organization

Differential importance. One way spouses may organize their specific perceptions is to attribute differential importance to their positive and negative specific perceptions. Attributing greater importance to positive relationship perceptions than to negative relationship perceptions serves to limit the contribution of negative perceptions to the global evaluation, allowing satisfaction to remain high despite the presence of specific negative aspects of the relationship (Neff & Karney, unpublished manuscript). To assess spouses' use of a differential importance strategy to organize their specific relationship perceptions, spouses completed the Inventory of Specific Relationship Standards at each time point (Baucom, Epstein, Rankin, & Burnett, 1996; See Appendix C). The measure presents spouses with sixteen specific relationship standards, such as "My partner and I should spend a lot of time and energy expressing physical affection for each other," and "My partner and I should have the same ideas about how the housework should be done."

For each item, spouses were asked two questions. First, spouses were asked to indicate whether the standard was currently being met in their relationship. Thus, this question assessed spouses' current perceptions of how the marriage was meeting or

failing to meet each specific standard. For the first three waves of data collection (T1-T3), this question was measured on a dichotomous scale (1 = yes, 0 = no) as originally designed by Baucom and colleagues (1996). This dichotomous scale was changed to a five-point continuous scale for the last four waves of data collection (T4-T7). However, given that we were interested in comparing spouses' responses across the waves of data, the continuous scale was changed back into a dichotomous scale for the purposes of computing the differential importance index described below.[1] Second, spouses were asked to indicate on the same page how upset they would be if the standard were not met (1 = not at all; 3 = very much). Thus, this question assessed the importance spouses attributed to each standard. Specifically, a response indicating that the individual would be very upset if the standard were not met suggests that the standard is highly important to the person. To calculate a differential importance index, the within-subjects association between specific relationship perceptions and the importance of those perceptions was then computed according to the following equation:

$$\text{Specific Perception} = \beta_{oj} + \beta_{1j}\,(\text{Importance of Perception}) + \text{error}$$

Thus, a higher β_1 would represent a higher, more positive differential importance index, indicating that spouses' view their positive perceptions as more important than their negative perceptions. This measure of cognitive organization was computed for each spouse at every time point.

Attributions. Attributions represent a process in which spouses determine whether their partners' specific behavioral failings are taken as an indication of broader faults in

[1] To change the 5-point continuous scale to a dichotomous scale, the frequency distribution of each item was examined for husbands and wives at each of the first three time points. In general, approximately 80% of individuals responded "yes" to each item and 20% of individuals responded "no." To approximate this frequency distribution

the relationship, or whether these behaviors should be separated from overall judgments of the relationship. Relying on temporary, situational attributions to describe a partner's transgression should serve to weaken the link between the negative specific behavior and spouses' global relationship evaluation (McNulty & Karney, 2001). The manner in which spouses use attributions to link specific behaviors to their global satisfaction was assessed at each time point using the Relationship Attributions Measure (RAM; Fincham & Bradbury, 1992; see Appendix D). This 24-item measure presents spouses with four negative stimulus events that are likely to occur in all marriages (e.g., "Your spouse criticizes something you say" and "Your spouse begins to spend less time with you"). For each event, spouses are asked to rate their agreement, on a 7-point scale ranging from "Agree strongly" to "Disagree strongly," with statements that reflect six attribution dimensions. The causal attribution sub-scale consists of 12 judgments (3 dimensions X 4 stimulus events) and the responsibility attributions sub-scale consists of 12 judgments. For causal attributions, the three dimensions relate to the perceived locus, globality, and stability of the cause of the negative partner behavior. For responsibility attributions, the three dimensions capture the extent to which spouses consider their partners' behaviors as intentional, selfishly motivated, and blameworthy. For each sub-scale, a composite score was computed by summing the 12 judgments, resulting in two scores for each spouse with possible ranges of 12 to 84. Higher scores indicate attributions that view the partner in a more negative light. Internal consistency of each sub-scale was relatively high across the seven waves of data collection. Coefficient alphas for causality attributions ranged from .85 to .92 for husbands and from .73 to .86 for wives. Coefficient alphas for

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when converting the continuous scale to a dichotomous scale, we recoded a response of 1 or 2 to be a 0 (i.e., "no") and a 3, 4, or 5, to be a 1 (i.e., yes). After this recoding, the frequency distribution of each item tended to be 85% "yes" and 15% "no."

responsibility attributions ranged from .89 to .95 for husbands and from .88 to .91 for wives. Causality and responsibility attributions were significantly correlated across the time points for husbands (ranging from .58 to .78) and for wives (ranging from .52 to .66).

Stressful Life Circumstances

To assess external acute stress at each time point, couples completed a subset of the Stressful Life Events checklist (SLE; Bradbury, unpublished manuscript; see Appendix E) designed to assess life events in the previous 6 months. Ninety events were selected from other standardized life events checklists, with an emphasis on objective events likely to occur in a young, married population. Events were grouped to represent nine life domains: marriage, work, school, family and friends, finances, health, personal events, living conditions, and legal. For each event, spouses were first asked to indicate whether the event occurred. If the event occurred, spouses then indicated the impact the event had on their lives on a 7-point scale ranging from extremely negative (-3) to extremely positive (+3). Each stressful event then had to meet two criteria to be included in the final composite score. First, the event could not represent a likely consequence of marital satisfaction or marital distress. Fourteen items were not included in the final score for this reason.[2] In this way, the measure should tap only those stressors external to (i.e., less likely to be caused by) the marriage. For instance, whereas being fired from a job or being hospitalized may affect the marriage, these events are less likely to have

[2] The following items were not included on the Survey of Stressful Life Events as they were likely to represent consequences of marital satisfaction or marital distress: change in quality of relationship with spouse; change in number of arguments with spouse; had an affair; spouse had an affair; reconciliation with spouse after separation; pregnancy; had a baby; abortion; sexual difficulties; dropped out of school for personal reasons; major change in sleeping habits; major change in eating habits; emotional or psychological illness.

been caused by the marriage. Second, consistent with the recommendations of Turner and Wheaton (1997), the event had to represent a negative life stressor. Turner and Wheaton (1997) found in their review of the stress literature that clear patterns of results emerge in studies of negative events whereas the effects of positive events are weak and inconsistent. On the basis of this review, the authors have recommended that stressors generally considered as positive be excluded from stress measures. To identify negative stressful events, we examined the average impact rating of each event at each wave of data collection. To be included in the final composite score, the event had to be rated as having a negative impact on average by both husbands and wives each time the item was endorsed. Thus, a total of 51 stressful life events were used to calculate the final stress score (see bolded items in Appendix F). Analysis of the events revealed that at each time point, most (75%) of these 51 items were endorsed by at least one individual, suggesting that the items are a reasonable sampling of life events likely to be experienced by couples in the early stages of marriage. The final stress score was computed by adding together the number of negative events the spouse reported had occurred. Stress scores could range from zero to 51.

Data Analysis

Examination of many of the hypotheses concerning the association between negative external stress and cognitive processes internal to the relationship require within-subjects analyses. A within-subjects approach allowed for the examination of whether changes in a spouse's stress were associated with changes in his or her relationship cognitions, controlling for spouses' idiosyncratic tendency to view their relationship and their stress more or less favorably. To address hypotheses at the within-subjects level, data were examined with Hierarchical Linear Modeling (HLM; Bryk & Raudenbush, 1992),

implemented with the HLM/2L computer program (Bryk, Raudenbush, & Congdon, 1994). This approach was adopted for several reasons. First, in contrast to other approaches to analyzing multilevel models (e.g., structural equation modeling), HLM provides reliable estimates of within-subject parameters even when sample sizes are relatively small. Second, HLM provides maximally efficient estimates of these parameters by weighting individual estimates according to empirical Bayes theory. When the within-subject parameter for an individual can be estimated precisely, the final estimate relies heavily on the individual data. When the parameter cannot be estimated precisely (e.g., because of missing data), the final estimate relies more heavily on the mean of the sample. Because the most precise estimates therefore contribute more to the final estimated variance of the sample, variances estimated in this way tend to be more conservative than those obtained through traditional OLS methods.

In general, data from each spouse was used to estimate the association between spouses' stressful life experiences and the content and organization of their relationship cognitions.

RESULTS

Descriptive Statistics and Correlations

Table 1 presents descriptive statistics for measures of global satisfaction and of specific relationship perceptions. As would be expected from a sample of newlywed couples, on average both husbands and wives reported high levels of global marital satisfaction and low levels of negative specific relationship perceptions. Spouses' perceptions of specific problems in the relationship were significantly negatively associated with their global marital satisfaction, with correlations ranging from -.60 to -.83 for husbands and from -.77 to -.86 for wives. A repeated-measures ANOVA with a linear contrast test was conducted to test for linear change in global satisfaction scores over time. Results revealed that both husbands' and wives' satisfaction tended to decrease significantly over the seven waves of data, $F(1,47) = 5.5$, $p = .02$, $\eta^2 = .11$ for husbands and $F(1,49) = 13.9$, $p = .001$, $\eta^2 = .22$ for wives. Tests for linear change in spouses' perceptions of specific marital problems were not significant for husbands, $F(1,48) = .22$, $p = .64$, $\eta^2 = .01$, but were significant for wives, $F(1,48) = 4.5$, $p = .04$, $\eta^2 = .09$. Thus, on average, husbands' negative specific perceptions of the relationship seemed to remain fairly stable across the seven waves of data. Conversely, wives tended to perceive more specific problems in the relationship over time.

Table 2 presents descriptive statistics for all measures of cognitive organization. On average, husbands and wives appeared to make relatively positive attributions for

their partners' negative behaviors, seeing external causes for negative events and freeing their partners from blame. Tests for linear change in causal attributions were not significant for husbands, but were significant for wives, $F(1,38) = .09$, $p = .76$, $\eta^2 = .003$, and $F(1,40) = 4.0$, $p = .05$, $\eta^2 = .09$, respectively. On average, then, husbands' causal attributions of their wives' transgressions remained fairly stable over time. However, wives' tendency to view their husbands as the cause of negative behaviors increased over time. Tests for linear change in spouses' responsibility attributions were not significant for husbands or for wives, $F(1,38) = 3.8$, $p = .06$, $\eta^2 = .09$, and $F(1,40) = 2.8$, $p = .10$, $\eta^2 = .07$, respectively. Thus, on average, husbands' and wives' tendencies to perceive their partners as responsible for negative behaviors remained fairly stable over time.

Turning to spouses' use of differential importance to organize their specific perceptions, the average differential importance index was positive and significant for both spouses across time, suggesting that, on average, husbands and wives tended to attribute more importance to their positive relationship perceptions than to their negative relationship perceptions. Tests for linear change in spouses' differential importance index were significant for wives but not for husbands, $F(1,31) = 77.6$, $p < .001$, $\eta^2 = .72$, and $F(1,31) = 2.1$, $p = .16$, $\eta^2 = .06$, respectively. Thus, on average, wives seemed to exhibit a weaker tendency to attribute more importance to their positive relationship perceptions than to their negative relationship perceptions over time. Husbands' differential importance index, however, seemed to remain fairly stable over time. Differential importance was inconsistently significantly associated with both causal and responsibility attributions. Husbands' tendency to attribute more importance to positive relationship perceptions than to negative relationship perceptions was significantly associated with a weaker tendency to make internal and blaming attributions for a partner's negative

behavior at three of the seven time points, with correlations ranging from .08 to -.39 for causal attributions and from .03 to -.45 for responsibility attributions. Wives' use of differential importance was significantly associated with a weaker tendency to make internal and blaming attributions for their partners' negative behavior at four of the seven time points, with correlations ranging from -.09 to -.46 for causal attributions and from .09 to -.45 for responsibility attributions.

Table 3 presents descriptive statistics for the measure of acute stress. On average, husbands and wives reported experiencing low numbers of acute negative stressors. However, the range of the number of stressors reported at each time point was fairly large, suggesting there was at least some variability in the number of stressors that spouses were experiencing. Tests for linear change in acute stress scores were significant for husbands and for wives, $F(1, 36) = 11.5$, $p = .002$, $\eta^2 = .25$, and $F(1,39) = 5.5$, $p = .02$, $\eta^2 = .13$, respectively. Thus, the number of acute stressors spouses reported tended to decrease over the seven waves of data.

With respect to the independent and hypothesized mediating variables, wives' stress was significantly associated with the negativity of their specific relationship perceptions, with correlations ranging from .23 to .57. However, the associations between husbands' stress and their specific relationship perceptions rarely reached significance, with correlations ranging from .01 to .40. Stress was only inconsistently significantly associated with less relationship-enhancing cognitive organizations. In most cases, the association between stress and the tendency to make internal causal attributions for a partner's negative behavior did not reach significance, with correlations ranging from .08 to .30 for husbands and from .13 to .28 for wives. Likewise, the association between stress and the tendency to perceive the partner as responsible for negative

behaviors rarely reached significance, with correlations ranging from .05 to .25 for husbands and from .02 to .28 for wives. Nevertheless, stress did tend to be significantly associated with a weaker tendency to attribute more importance to positive relationship perceptions than to negative relationship perceptions (i.e., a lower differential importance index), with correlations ranging from -.08 to -.25 for husbands and from -.41 to .22 for wives.

Spouses' cognitive content tended to be associated with their cognitive organization. Spouses' negative relationship perceptions were significantly associated with the tendency to make internal attributions for a partner's negative behavior, with correlations ranging from .34 to .50 for husbands and from .33 to .57 for wives. Similarly, spouses' negative relationship perceptions were significantly associated with a tendency perceive the partner as responsible for negative behaviors, with correlations ranging from .33 to .45 for husbands and from .22 to .49 for wives. Finally, spouses' negative relationship perceptions were significantly associated with a weaker tendency to attribute more importance to positive relationship perceptions than to negative relationship perceptions, with correlations ranging from -.19 to -.60 for husbands and from -.11 to -.50 for wives. Thus, all analyses examining the role of cognitive organization in stress spillover and crossover process controlled for spouses' cognitive content.

Cross-spouse correlations for the independent and mediating variables reveal that husbands' and wives' stress scores were significantly associated, with correlations ranging from .16 to .44. With regard to cognitive content, husbands' and wives' negative perceptions of the relationship were significantly associated, with correlations ranging from .37 to .73, suggesting that spouses tended to perceive their relationships in similar

ways. Turning to measures of cognitive organization, husbands' and wives' tendencies to attribute their partners' negative behavior to internal causes were significantly associated at three of the seven time points, with correlations ranging from -.03 to .32. In addition, husbands' and wives' tendencies to view their partners as responsible for their negative behaviors tended to be significantly associated, with correlations ranging from -.09 to .43. Finally, husbands' and wives' tendencies to attribute more importance to their positive perceptions than to their negative perceptions were significantly associated, with correlations ranging from .52 to .81. Thus, spouses seemed to organize their specific relationship beliefs in similar ways.

In most cases, the association between husbands' stress and wives' negative relationship perceptions did not reach significance, with correlations ranging from .07 to .29. However, wives' stress was significantly associated with husbands' negative relationship perceptions, with correlations ranging from .05 to .48. Overall, spouses' stress was not significantly associated with their partners' cognitive organization. Husbands' and wives' stress were not significantly associated with their partners' tendency to make internal causal attributions for negative behaviors, with correlations ranging from .07 to .31 for husbands' stress and from -.18 to .22 for wives' stress. Husbands' and wives' stress also were not significantly associated with their partners' tendency to make blaming attributions for negative behaviors, with correlations ranging from -.10 to .29 for husbands' stress and from -.05 to .27 for wives' stress. Finally, husbands' and wives' stress were not significantly associated with their partners' tendency to attribute more importance to positive relationship perceptions than to negative relationship perceptions, with correlations ranging from -.12 to -.29 for husbands' stress and from -.09 to -.33 for wives' stress.

Overall, then, preliminary analyses indicate that all measures performed generally as expected. In general, spouses' stress was positively and significantly related both to spouses' own negative relationship perceptions. Contrary to Hypothesis 2, spouses' stress was not consistently significantly associated with spouses' own cognitive organization. However, these bivariate correlations do not threaten subsequent analyses as they only test for a linear relationship between stress and cognitive organization rather than the predicted curvilinear relationship. Moreover, these correlations do not address the within-subjects association between changes in stress and changes in cognitive organization. In line with Hypothesis 3, spouses' stress was associated with their partners' negative specific perceptions of the relationship, but was not significantly related to their partners' cognitive organization. To more thoroughly examine the hypotheses of the current study, the following sections present the results of analyses conducted to investigate the within-subjects association between changes in stress and changes in cognitive content or cognitive organization over time.

Do Spouses' Specific Relationship Perceptions Mediate the Stress Spillover Process?

Previous research on stress and relationship quality consistently has demonstrated that the experience of stress may affect individuals' judgments of their relationships. However, this literature has failed to address the processes through which stress may negatively influence relationship judgments. The first goal of these analyses, then, was to examine the role of cognitive content in the stress spillover process. Hypothesis 1 suggests that stress should contribute to the deterioration of marital satisfaction through its effects on spouses' specific relationship perceptions.

Hypothesis 1a: The Stress Spillover Hypothesis

Hypothesis 1a sought to replicate and extend previous work on stress spillover. Specifically, we predicted that increases in spouses' external negative life events would be associated with decreases in their marital satisfaction over the first 3 ½ years of marriage. Preliminary analyses revealed that spouses' marital satisfaction seemed to significantly decrease over time. Thus, to examine the stress spillover hypothesis, we first examined the appropriate baseline model of satisfaction over time for husbands and for wives by comparing the following two equations:

$$\text{Satisfaction} = \beta_{oj} + r_{ij} \qquad \text{[Equation 1]}$$

$$\text{Satisfaction} = \beta_{oj} + \beta_{1j}\,(\text{time}) + r_{ij} \qquad \text{[Equation 2]}$$

Again, results revealed that, on average, husbands' and wives' satisfaction significantly declined over the first years of marriage, $\beta_{1j} = -.80$, $SE = .23$, $t\,(81) = -3.4$, $p = .001$, effect size $r = .35$ for husbands and $\beta_{1j} = -1.3$, $SE = .27$, $t\,(81) = -4.8$, $p < .001$, effect size $r = .47$ for wives. Moreover, including time in the model significantly improved the fit of the model for both husbands and wives, $\chi^2\,(2) = 72.8$, $p < .001$ and $\chi^2\,(2) = 82.2$, $p < .001$, respectively. Consequently, to address the stress spillover hypothesis, we examined the within-person association between spouses' stress and their marital satisfaction according to the following model:

$$\text{Satisfaction} = \beta_{oj} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{stress}) + r_{ij} \qquad \text{[Equation 3]}$$

where time and stress were group-mean centered. In this equation, β_{oj} represents an estimate of the average positivity of a spouse's global marital satisfaction. β_{1j} represents the slope of a spouse's satisfaction over the first years of marriage. β_{2j}, then, captures the within-person association between changes in stress and changes in marital satisfaction

over the first years of marriage for a given spouse, controlling both for a spouse's tendency to view the relationship as more or less satisfying and for the tendency for satisfaction to decrease linearly over time. In other words, a negative β_{2j} would indicate that increases in a spouse's negative external stressors are associated with decreases in marital satisfaction above and beyond the tendency for satisfaction to decrease simply as a function of time. Finally, r_{ij} is the residual variance in satisfaction for a spouse, assumed to be independent and normally distributed across spouses. This equation was estimated for each spouse and the significance of the average β_2 term across spouses was investigated.

Results revealed that, for wives, increases in exposure to negative external stressors were significantly associated with decreases in marital satisfaction, $\beta_{2j} = -.42$, $SE = .18$, $t(81) = -2.3$, $p = .02$, effect size $r = .23$. Thus, extending previous work, which has demonstrated stress spillover processes over the course of several days, these results provided evidence of stress spillover over the first 3 ½ years of marriage. However, stress spillover was not found for husbands. For husbands, changes in stress were not significantly associated with changes in marital satisfaction, $\beta_{2j} = -.002$, $SE = .16$, $t(81) = -.02$, $p = .99$, effect size $r = .002$.

Hypothesis 1b: Specific Perceptions and the Stress Spillover Process

Given that wives' stress was found to be significantly associated with their marital satisfaction, Hypothesis 1b predicted that wives' specific relationship perceptions should mediate this stress spillover effect. Specifically, increases in stress were expected to be associated with corresponding increases in the negativity of specific relationship perceptions. To examine this hypothesis, the procedures for testing mediation outlined by Baron and Kenny (1986) were followed. In addition to Equation 3 estimated above,

Baron and Kenny (1986) argue that three additional equations must be estimated in order to test for mediation effects. First, the proposed mediator variable must be significantly associated with the outcome variable. In other words, specific relationship perceptions should be significantly associated with global marital satisfaction. This effect was modeled according to the following equation:

$$\text{Satisfaction} = \beta_{oj} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{specific perceptions}) + r_{ij} \qquad \text{[Equation 4]}$$

where time and specific perceptions were group-mean centered. In this equation, β_{oj} represents an estimate of the average positivity of a wife's global marital satisfaction. β_{1j} represents the slope of a wife's satisfaction over the first years of marriage. β_{2j} represents the within-person association between perceptions of specific problems in the relationship and marital satisfaction for a given wife. A negative β_{2j} would indicate that in increases in the negativity of specific relationship perceptions are associated with decreases in overall marital satisfaction, controlling both for a wife's tendency to view the relationship as more or less satisfying and for the tendency of satisfaction to decrease linearly over time. Finally, r_{ij} is the residual variance in satisfaction for a wife, assumed to be independent and normally distributed across wives. This equation was estimated for each wife and the significance of the average β_2 term across wives was investigated. This association was in fact significant, $\beta_{2j} = -.42$, $SE = .05$, $t(81) = -8.3$, $p < .001$, effect size $r = .68$, suggesting that changes in specific perceptions are associated with corresponding changes in global satisfaction over time.

Second, the independent variable must be significantly associated with the proposed mediating variable. In other words, stress should be significantly associated with specific relationship perceptions. To model this association, we first examined the

appropriate baseline model of specific relationship perceptions over time for wives by comparing the following two equations:

$$\text{Specific Perceptions} = \beta_{0j} + r_{ij} \quad \text{[Equation 5]}$$

$$\text{Specific Perceptions} = \beta_{0j} + \beta_{1j}\,(\text{time}) + r_{ij} \quad \text{[Equation 6]}$$

Results revealed a significant tendency for wives' specific perceptions of the relationship to become more negative over the first years of marriage, $\beta_{1j} = .71$, $SE = .24$, $t\,(81) = 2.9$, $p = .004$, effect size $r = .30$. Moreover, including time in the model significantly improved the fit of the model, $\chi^2\,(2) = 25.5$, $p < .001$. Consequently, the within-person association between stress and specific relationship perceptions was modeled according to the following equation:

$$\text{Specific Perceptions} = \beta_{0j} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{stress}) + r_{ij} \quad \text{[Equation 7]}$$

where time and stress were group-mean centered. In this equation, β_{0j} represents an estimate of the average negativity of a wife's specific relationship perceptions. β_{1j} represents the slope of a wife's specific perceptions over the first years of marriage. β_{2j}, then, captures the within-person association between stress and specific relationship perceptions over the first years of marriage for a given wife, controlling both for a wife's tendency to view the relationship more or less negatively and for the tendency for negative relationship perceptions to increase linearly over time. In other words, a positive β_{2j} would indicate that increases in a wife's negative external stressors are associated with corresponding increases in a wife's perceptions of specific problems in the relationship, above and beyond the tendency for perceptions of specific problems to increase simply as a function of time. Finally, r_{ij} is the residual variance in specific perceptions for a wife, assumed to be independent and normally distributed across wives.

This equation was estimated for each wife and the significance of the average β_2 term across wives was investigated. Results showed that, over the first years of marriage, increases in wives' exposure to negative external stressors were associated with increases in the negativity of wives' specific relationship perceptions, $\beta_{2j} = .67$, $SE = .17$, $t(81) = 3.9$, $p < .001$, effect size $r = .40$.

Finally, Baron and Kenny (1986) argue that both the independent variable and the predicted mediator variable should be regressed simultaneously onto the outcome variable. In other words, the association between stress and satisfaction and specific relationship perceptions and satisfaction should be estimated simultaneously. If the association between stress and satisfaction is lower in this equation than in Equation 3, this would provide evidence for mediation effects. Thus, to test for mediation, the following equation was modeled:

Satisfaction = $\beta_{oj} + \beta_{1j}$ (time) + β_{2j} (specific perceptions) + β_{3j} (stress) + r_{ij} [Equation 8]

where time, specific perceptions and stress were group-mean centered. In this equation, β_{oj} represents an estimate of the average positivity of a wife's global marital satisfaction. β_{1j} represents the slope of a wife's satisfaction over the first years of marriage. β_{2j} represents the within-person association between perceptions of specific problems in the relationship and marital satisfaction. β_{3j} represents the within-person association between stress and marital satisfaction. Finally, r_{ij} is the residual variance in satisfaction for a wife, assumed to be independent and normally distributed across wives. This equation was estimated for each wife and the significance of the average β_2 and β_3 terms across wives was investigated.

Results demonstrated that increases in the negativity of wives' specific relationship perceptions remained significantly associated with decreases in their marital satisfaction, $\beta_{2j} = -.43$, $SE = .05$, $t(81) = -8.2$, $p < .001$, effect size $r = .67$. However, changes in wives' stress were no longer associated with changes in wives' marital satisfaction, $\beta_{3j} = -.03$, $SE = .16$, $t(81) = .18$, $p = .86$, effect size $r = .02$. Consequently, wives' specific relationship perceptions seemed to fully mediate the stress spillover process.[1]

Overall, then, evidence for stress spillover was found for wives, but not for husbands. For wives, changes in the number of negative external stressors being experienced were significantly associated with changes in their global marital satisfaction over the first 3 ½ years of marriage, such that increases in stress were associated with decreases in satisfaction. Moreover, wives' specific relationship perceptions seemed to mediate this stress spillover process. Namely, changes in the number of external stressors being experienced were significantly associated with changes in wives' specific relationship perceptions, such that increases in stress were associated with increases in the negativity of wives' specific perceptions. This association between stress and specific perceptions seemed to account for the relationship between stress and overall satisfaction.

Does Spouses' Cognitive Organization Mediate the Stress Spillover Process?

The second goal of these analyses was to examine the role of cognitive organization in the stress spillover process. Hypothesis 2 suggests that stress also should contribute to the deterioration of marital satisfaction through its effects on spouses' cognitive

[1] Given the limitations of cross-sectional data for testing mediation, we further tested the hypothesis that specific perceptions mediate the stress spillover process by examining the opposite mediation effect, namely, whether satisfaction mediates the association between specific perceptions and stress. Evidence for full mediation was not found in this analysis.

organization. Again, given that evidence for stress spillover was found for wives but not for husbands, the following analyses relied on data from wives only. Moreover, as this study measured three types of cognitive organization (causal attributions, responsibility attributions and differential importance), each of the following analyses was conducted three times, using each measure of cognitive organization.

Hypothesis 2a: Stress and Cognitive Organization

Hypothesis 2a predicted that changes in spouses' external negative life events would be associated with corresponding changes in their cognitive organization over the first 3 ½ years of marriage, independent of changes in their cognitive content. Specifically, we predicted that spouses' cognitive organization would be cuvilinearly related to their stress, such that as stress increases from low to moderate, spouses' cognitive organization should become more positive. As stress increases from moderate to high, however, spouses' cognitive organization should become more negative. To examine the association between stress and cognitive organization for wives, we first examined the appropriate baseline model for modeling cognitive organization over time by comparing the following two equations for each measure of cognitive organization:

$$\text{Cognitive Organization} = \beta_{oj} + r_{ij} \qquad \text{[Equation 9]}$$

$$\text{Cognitive Organization} = \beta_{oj} + \beta_{1j}\,(\text{time}) + r_{ij} \qquad \text{[Equation 10]}$$

Results indicated that wives' tendency to make internal attributions for their husbands' behavioral transgressions tended to increase significantly over time, $\beta_{1j} = .39$, $SE = .16$, $t(81) = 2.4$, $p = .02$, effect size $r = .26$. Moreover, including time in the model significantly improved the fit of the model, $\chi^2(2) = 19.9$, $p < .001$. Results also revealed

$p = .06$, effect size $r = .21$, however, including time in the model nevertheless improved the fit of the model, $\chi^2 (2) = 21.3$, $p < .001$. Finally, wives' tendency to view positive relationship perceptions as more important than negative relationship perceptions significantly declined over time, $\beta_{1j} = -.09$, $SE = .01$, $t (81) = -9.9$, $p < .001$, effect size $r = .74$. Again, including time in the model significantly improved the fit of the model, $\chi^2 (2) = 91.7$, $p < .001$.

To test for a curvilinear relationship between stress and cognitive organization, the within-person association between wives' stress and their cognitive organization was then modeled according to the following equation:

$$\text{Cognitive Organization} = \beta_{0j} + \beta_{1j} (\text{time}) + \beta_{2j} (\text{stress}) + \beta_{3j} (\text{stress}^2) + r_{ij} \quad \text{[Equation 11]}$$

where time and stress were group-mean centered. In this equation, β_{0j} represents an estimate of the average positivity of a wife's cognitive organization. β_{1j} represents the slope of a wife's cognitive organization over the first years of marriage. β_{2j}, then, captures the association between cognitive organization and stress over the first years of marriage for a given wife, controlling both for a wife's tendency to organize specific perceptions more or less positively and for the tendency of cognitive organization to change linearly over time. In other words, in the case of causal or responsibility attributions, a *positive* β_{2j} would indicate that increases in a wife's negative external stressors are associated with decreases in the positivity of a wife's cognitive organization. In the case of differential importance, a *negative* β_{2j} would indicate that increases in a wife's negative external stressors are associated with decreases in the positivity of a wife's cognitive organization. β_{3j} captures the curvilinear association between stress and cognitive organization, again controlling for a wife's tendency to organize specific

perceptions more or less positively and for the tendency of cognitive organization to change linearly over time. In the case of causal and responsibility attributions, a *positive* β_{3j} would indicate the predicted U-shape curve. In the case of differential importance, a *negative* β_{3j} would indicate the predicted U-shape curve. Finally, r_{ij} is the residual variance in cognitive organization for a wife, assumed to be independent and normally distributed across wives. This equation was estimated for each wife and the significance of the average β_3 term across wives was investigated.

Results revealed no significant curvilinear associations between stress and cognitive organization, $\beta_{3j} = -.05$, $SE = .03$, $t(81) = -.1.8$, $p = .08$, effect size $r = .20$ for causality attributions; $\beta_{3j} = .001$, $SE = .04$, $t(81) = .02$, $p = .99$, effect size $r = .002$ for responsibility attributions; and $\beta_{3j} = -.0001$, $SE = .002$, $t(81) = -.09$, $p = .93$, effect size $r = .01$ for differential importance.

To test for a linear relationship between stress and cognitive organization, then, the within-person association between stress and cognitive organization was modeled according to the following equation:

$$\text{Cognitive Organization} = \beta_{oj} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{stress}) + r_{ij} \qquad \text{[Equation 12]}$$

where time and stress were group-mean centered. As in the previous equation, β_{2j}, captures the association between cognitive organization and stress over the first years of marriage for a given wife, controlling both for a wife's tendency to organize specific perceptions more or less positively and for the tendency of cognitive organization to change linearly over time. Again, in the case of causal or responsibility attributions, a positive β_{2j} would indicate that increases in a wife's negative external stressors are associated with decreases in the positivity of a wife's cognitive organization. In the case

of differential importance, a negative β_{2j} would indicate that increases in a wife's negative external stressors are associated with decreases in the positivity of a wife's cognitive organization. This equation was estimated for each wife and the significance of the average β_2 term across wives was investigated.

Results indicated no significant linear association between wives' causality attributions and their stress, $\beta_{2j} = .17$, $SE = .13$, $t(81) = 1.3$, $p = .18$, effect size $r = .14$. However, increases in wives' stress were significantly associated with a stronger tendency to blame the partner for negative behaviors, $\beta_{2j} = .46$, $SE = .17$, $t(81) = 2.7$, $p = .007$, effect size $r = .29$. Wives' stress was not significantly associated with their tendency to attribute more importance to positive relationship perceptions than to negative relationship perceptions, $\beta_{2j} = .01$, $SE = .01$, $t(81) = .52$, $p = .60$, effect size $r = .06$.

Preliminary analyses revealed that spouses' cognitive organization tended to be significantly associated with their cognitive content. Thus, to determine whether the association between wives' stress and their responsibility attributions was independent of wives' cognitive content, the following equation was estimated:

$$\text{Responsibility} = \beta_{0j} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{stress}) + \beta_{3j}\,(\text{specific perceptions}) + r_{ij} \qquad \text{[Equation 13]}$$

where time, stress, and specific perceptions were group-mean centered. Thus, in this equation, β_{2j} represents the association between responsibility attributions and stress over the first years of marriage for a given wife, controlling for the association between a wife's specific relationship perceptions and her responsibility attributions. Results indicated that wives' specific relationship perceptions were in fact significantly

associated with their responsibility attributions for their husbands' negative behaviors, β_{3j} = .13, SE = .05, t (81) = 2.9, p = .004, effect size r = .31. Thus, as wives' specific perceptions of the relationship became more negative, they also exhibited a stronger tendency to perceive their husbands as responsible for negative behaviors. Controlling for this association, however, wives' stress remained significantly associated with their responsibility attributions, such that increases in wives' stress were associated with a stronger tendency for wives to perceive their husbands as responsible for negative behaviors, β_{2j} = .33, SE = .17, t (81) = 2.0, p = .05, effect size r = .22.

Overall, then, no evidence was found for the predicted curvilinear relationship between stress and cognitive organization. However, some evidence revealed a linear association between stress and cognitive organization, such that increases in wives' stress were associated with decreases in the positivity of wives' cognitive organization. Namely, changes in wives' stress were significantly associated with changes in wives' tendency to perceive their husbands as responsible for negative behaviors, even when controlling for the general negativity of wives' cognitive content.

Hypothesis 2b: Cognitive Organization and the Stress Spillover Process

Hypothesis 2b suggested that spouses' cognitive organization should mediate the stress spillover process. To examine this hypothesis, the procedures for testing mediation outlined by Baron and Kenny (1986) were followed. In addition to Equation 3, which modeled the stress spillover phenomenon, and Equation 13, which modeled the association between stress and responsibility attributions controlling for cognitive content, two additional equations must be estimated in order to test for mediation effects. First, the proposed mediator variable, responsibility attributions, must be significantly

associated with the outcome variable, global marital satisfaction. This effect was modeled according to the following equation:

$$\text{Satisfaction} = \beta_{0j} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{specific perceptions}) + \beta_{3j}\,(\text{responsibility attributions}) + r_{ij} \qquad \text{[Equation 14]}$$

where specific perceptions and responsibility attributions were group-mean centered. In this equation, β_{0j} represents an estimate of the average positivity of a wife's global marital satisfaction. β_{1j} represents the slope of a wife's satisfaction over the first years of marriage. β_{2j} represents the within-person association between specific relationship perceptions and global marital satisfaction. β_{3j} represents the within-person association between responsibility attributions and marital satisfaction. A negative β_{3j} would indicate that increases in the tendency to perceive a partner as more responsible for negative behaviors are associated with decreases in overall marital satisfaction, controlling for a wife's tendency to view the relationship as more or less satisfying, for the tendency for satisfaction to decrease linearly over time, and for wives' cognitive content. In other words, β_{3j} examines the association between cognitive organization and marital satisfaction, controlling for the association between cognitive content and marital satisfaction. Finally, r_{ij} is the residual variance in satisfaction for a wife, assumed to be independent and normally distributed across wives. This equation was estimated for each wife and the significance of the average β_3 term across wives was investigated. The association was in fact significant, $\beta_{3j} = -.09$, $SE = .03$, $t\,(81) = -2.7$, $p = .008$, effect size $r = .29$, suggesting that changes in wives' responsibility attributions were associated with changes in wives' marital satisfaction, controlling for wives' specific perceptions of problems in the relationship.

Second, the association between stress and satisfaction and cognitive organization and satisfaction were estimated simultaneously. If the association between stress and satisfaction is lower in this equation than in Equation 3, this result would provide evidence for mediation effects. Thus, to test for mediation, the following equation was modeled:

$$\text{Satisfaction} = \beta_{0j} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{responsibility attributions}) + \beta_{3j}\,(\text{stress}) + r_{ij} \qquad \text{[Equation 15]}$$

where time, responsibility attributions, and stress were group-mean centered. In this equation, β_{0j} represents an estimate of the average positivity of a wife's global marital satisfaction. β_{1j} represents the slope of a wife's satisfaction over the first years of marriage. β_{2j} represents the within-person association between responsibility attributions and marital satisfaction. β_{3j} represents the within-person association between stress and marital satisfaction. Finally, r_{ij} is the residual variance in satisfaction for a wife, assumed to be independent and normally distributed across wives. Given that previous results indicated that wives' perceptions of specific problems in the relationship fully mediated the stress spillover process, this variable was not included in the present equation. This equation was estimated for each wife and the significance of the average β_3 terms across wives was investigated.

Results demonstrated that increases in the tendency to perceive a partner as responsible for negative behaviors remained significantly associated with decreases in marital satisfaction, $\beta_{2j} = -.20$, $SE = .05$, $t\,(81) = -3.8$, $p < .001$, effect size $r = .39$. However, the association between wives' stress and their marital satisfaction was no longer significant, $\beta_{3j} = -.22$, $SE = .14$, $t\,(81) = -1.5$, $p = .13$, effect size $r = .16$.

Consequently, wives' responsibility attributions seemed to fully mediate the stress spillover process. Namely, increases in stress were associated with less positive cognitive organization (i.e., a stronger tendency to perceive a partner as responsible for negative behaviors), even when controlling for the negativity of spouses' specific relationship perceptions. This association seemed to account for the stress spillover effect.[2]

Do Spouses' External Stressors Interact to Affect Marital Satisfaction?

Previous research has found that spouses' stress may affect not only spouses' own marital satisfaction, but also the marital satisfaction of their partners. However, this research has examined stress crossover without regard for the amount of stress partners may be experiencing themselves. The third goal of these analyses, then, was to examine the role of the partner's own stress in the stress crossover process. Hypothesis 3 suggests that partners' own stressful experiences may moderate the association between spouses' stress and partners' marital satisfaction.

Hypothesis 3a: The Stress Crossover Hypothesis

Hypothesis 3a first sought to replicate and extend previous work on stress crossover. Specifically, we predicted that increases in spouses' external negative life events would be associated with decreases in their partners' marital satisfaction over the first 3 ½ years of marriage. Results from Hypothesis 1a revealed that including time in the baseline model of satisfaction significantly improved the fit of the model for both husband and wives. Thus, the within-person association between spouses' stress and their partners'

[2] Given the limitations of cross-sectional data for testing mediation, we further tested the hypothesis that responsibility attributions mediate the stress spillover process by examining the opposite mediation effect, namely, whether satisfaction mediates the association between responsibility attributions and stress. Evidence for full mediation was not found in this analysis.

marital satisfaction was examined using the following equation:

Partner's Satisfaction = $\beta_{0j} + \beta_{1j}$ (time) + β_{2j} (spouse's stress) + r_{ij} [Equation 17]

where time and spouse's stress were group-mean centered. In this equation, β_{0j} represents an estimate of the average positivity of a partner's global marital satisfaction. β_{1j} represents the slope of a partner's satisfaction over the first years of marriage. β_{2j}, then, captures the within-person association between partners' marital satisfaction and their spouses' stress over the first years of marriage for a given partner, controlling both for a partner's tendency to view the relationship as more or less satisfying and for the tendency of satisfaction to decrease linearly over time. In other words, a negative β_{2j} would indicate that increases in a spouse's negative external stressors are associated with decreases in a partner's marital satisfaction above and beyond the tendency for satisfaction to decrease simply as a function of time. Finally, r_{ij} is the residual variance in satisfaction for a partner, assumed to be independent and normally distributed across partners. This equation was estimated for each partner and the significance of the average β_2 term across partners was investigated.

Evidence of stress crossover was not found for husbands, $\beta_{2j} = -.07$, $SE = .13$, $t(81) = -.55$, $p = .58$, effect size $r = .06$. Thus, changes in wives' stress were not associated with changes in their husbands' marital satisfaction. However, increases in husbands' stress were associated with corresponding decreases in wives' marital satisfaction, $\beta_{2j} = -.30$, $SE = .13$, $t(81) = -2.2$, $p = .03$, effect size $r = .24$. Thus, these results provide evidence of stress crossover over the first 3 ½ years of marriage.

Given that wives' stress tended to be moderately correlated with their husbands' stress, we then investigated whether this stress crossover effect was independent of

wives' stress spillover effect according to the following model:

$$\text{Wives' Satisfaction} = \beta_{oj} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{wives' stress}) + \beta_{3j}\,(\text{husbands' stress}) + r_{ij} \quad \text{[Equation 18]}$$

where time, husbands' stress and wives' stress were group-mean centered. In this equation, β_{oj} represents an estimate of the average positivity of a wife's global marital satisfaction. β_{1j} represents the slope of a wife's satisfaction over the first years of marriage. β_{2j} captures the within-person association between a wife's satisfaction and her own stress. In other words, β_{2j} is an estimate of stress spillover. β_{3j}, then, captures the within-person association between a wife's satisfaction and a husband's stress. In other words, β_{3j} estimates stress crossover controlling for stress spillover. Finally, r_{ij} is the residual variance in satisfaction for a wife, assumed to be independent and normally distributed across wives. This equation was estimated for each wife and the significance of the average β_2 and β_3 terms across wives was investigated.

Results indicated that the association between wives' stress and their own satisfaction remained significant, $\beta_{2j} =$ -.38, $SE = .18$, $t(81) = -2.1$, $p = .04$, effect size $r = .23$. Controlling for this association, however, the association between husband's stress and wives' satisfaction was no longer significant, $\beta_{3j} = -.16$, $SE = .14$, $t(81) = -1.1$, $p = .26$, effect size $r = .12$. Thus, these results suggest that the previous evidence for a stress crossover effect may be due simply to the correlation between husbands' and wives' external stressors. As evidence of an independent stress crossover effect was not found, the results of further analyses regarding the mediators and moderators of this effect (i.e., Hypotheses 3c-3f) are not reported.

Hypothesis 3b: Partners' Own Stress and the Stress Crossover Process

Though evidence of an independent crossover effect was not found, the possibility remains that husbands' and wives' stress may interact to affect wives' satisfaction. Hypothesis 3b predicted that the greatest declines in satisfaction should occur when both spouses are experiencing high levels of external stress. This hypothesis was modeled according to the following equation:

$$\text{Wives' Satisfaction} = \beta_{oj} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{husband's stress}) + \beta_{3j}\,(\text{wives' stress}) + \beta_{4j}\,(\text{husbands' stress X wives' stress}) + r_{ij} \qquad \text{[Equation 19]}$$

where time, husbands' stress and wives' stress were group-mean centered. In this equation, β_{oj} represents an estimate of the average positivity of a wife's global marital satisfaction. β_{1j} represents the slope of a wife's satisfaction over the first years of marriage. β_{2j}, then, captures the within-person association between a wife's satisfaction and a husband's stress. In, other words, β_{2j} is an estimate of stress crossover. β_{3j} captures the within-person association between a wife's satisfaction and her own stress. In other words, β_{3j} is an estimate of stress spillover. β_{4j} captures the within-person association between the interaction of spouses' stress and the wife's satisfaction, controlling both for the wife's tendency to view the relationship more or less positively and for the tendency for satisfaction to decrease linearly over time. Finally, r_{ij} is the residual variance in satisfaction for a wife, assumed to be independent and normally distributed across wives. This equation was estimated for each wife and the significance of the average β_4 term across wives was investigated. Results indicated that the association between the interaction of stress and wives' satisfaction was not significant, $\beta_{4j} = -.14$, $SE = .10$, t (81)

= -1.4, p = .16, effect size r = .15. Thus, evidence for the interactive effects of stress on satisfaction was not found.

Is Stress Always Detrimental to Relationship Outcomes?

Results thus far suggest that the experience of external stressors may be harmful for one's own relationship judgments. However, recent theories have argued that under some circumstances, stress may actually enhance well-being. The final goal of these analyses was to examine whether successful coping with stress early in the relationship may lead spouses to be resilient to future stress. Hypothesis 4 suggests that spouses who successfully cope with stress may emerge from the experience as less susceptible to the adverse effects of later stressors.

Hypotheses 4a and 4b: Coping, Satisfaction, and Stress Spillover

Hypothesis 4a suggested that spouses who maintain a positive organization of relationship perceptions in the face of external stress should be less vulnerable to declines in relationship satisfaction over time. Similarly, Hypothesis 4b predicted that spouses who maintain a positive organization of relationship perceptions in the face of external stress early in the relationship would be less vulnerable to stress spillover effects over time. These hypotheses were addressed simultaneously by re-examining the following previously estimated equation:

$$\text{Satisfaction} = \beta_{0j} + \beta_{1j}\,(\text{time}) + \beta_{2j}\,(\text{stress}) + r_{ij} \qquad \text{[Equation 3]}$$

where time and stress were group-mean centered. Again, in this equation, β_{1j} represents the slope of a spouse's satisfaction over the first years of marriage. β_{2j} captures the within-person association between spouses' satisfaction and their stress. In other words, β_{2j} is an estimate of stress spillover over the first years of marriage.

To determine the association between coping with early external stress and marital satisfaction over time, the following equation was then estimated at the between-subjects level of the HLM analysis:

$$\beta_{1j} = \gamma_{10} + \gamma_{11}\,(\text{T1 Stress}) + \gamma_{12}\,(\text{T1 Cognitive Organization}) + \gamma_{13}\,(\text{T1 Stress X T1 Cognitive Organization}) + \mu_{1j} \qquad \text{[Equation 20]}$$

where stress and cognitive organization were grand-mean centered. In this equation, γ_{10} represents an estimate of the average slope of spouses' marital satisfaction over time. γ_{11} represents the association between spouses' Time 1 stress and the slope of their satisfaction. Thus, a negative γ_{11} would indicate that spouses with the highest level of stress at Time 1 also experienced the greatest declines in satisfaction over time. γ_{22} represents the association between spouses' Time 1 cognitive organization and the slope of their satisfaction. For causality and responsibility attributions, a *negative* γ_{12} would indicate that spouses with the poorest cognitive organization at Time 1 also experienced the greatest declines in satisfaction over time. For differential importance, a *positive* γ_{12} would indicate that spouses with the poorest cognitive organization at Time 1 also experienced the greatest declines in satisfaction over time. γ_{13} captures the association between the interaction of stress and cognitive organization at Time 1 and the slope of satisfaction over time. In other words, γ_{13} represents the association between coping with early stress and satisfaction over time. Finally, μ_{1j} is the residual variability in the slope of satisfaction that remains to be explained after controlling for stress, cognitive organization and the interaction of these two variables. This equation was estimated using each measure of cognitive organization and the significance of the average γ_{13} term was investigated.

Results revealed only one significant main effect for husbands. Namely, husbands' Time 1 differential importance index was associated with the stability of their satisfaction over time, such that a more positive organization was associated with less decline in satisfaction over the early years of marriage, $\gamma_{12} = .83$, $SE = .42$, $t(79) = 2.0$, $p = .05$, effect size $r = .22$. No significant main effects were found for wives. Turning to the interaction terms, results indicated that the interaction between stress and causality attributions was not significantly associated with the slope of satisfaction over time for husbands or for wives, $\gamma_{13} = .002$, $SE = .005$, $t(78) = .44$, $p = .66$, effect size $r = .002$ and $\gamma_{13} = .009$, $SE = .008$, $t(78) = 1.09$, $p = .28$, effect size $r = .12$, respectively. However, the interaction between stress and responsibility attributions was significantly associated with the slope of satisfaction over time for husbands, $\gamma_{13} = -.01$, $SE = .006$, $t(78) = -1.9$, $p = .05$, effect size $r = .21$. This interaction was plotted using stress scores and responsibility attribution scores that were one standard below the mean and one standard deviation above the mean. As seen in Figure 1, husbands who maintained a more positive cognitive organization in the face of stress at Time 1 (i.e., tended not to blame their partners for negative behaviors) also experienced less decline in their satisfaction over time. In other words, for husbands, adaptively coping with stress by maintaining a positive cognitive organization was associated with more stable satisfaction over time than was unsuccessfully coping with that stress. Moreover, the size of this effect appears to be larger under conditions of low stress than under conditions of high stress. The type of attributions husbands made under low stress seemed to have a large influence on future satisfaction. Namely, the ability to make positive attributions under low stress seemed to contribute to the maintenance of satisfaction over time. However, under high stress, the ability to make positive attributions for a partner's negative behaviors appeared to have a

smaller protective effect on future satisfaction. In other words, attributions appeared to play less of a role when husbands were experiencing high stress. This interaction was not significant for wives, $\gamma_{13} = .006$, $SE = .004$, $t\,(78) = 1.7$, $p = .08$, effect size $r = .19$. Finally, the interaction between stress and differential importance was not significantly associated with the slope of satisfaction for husbands or for wives, $\gamma_{13} = -.22$, $SE = .25$, $t\,(78) = -.90$, $p = .37$, effect size $r = .10$ and $\gamma_{13} = -.26$, $SE = .33$, $t\,(78) = -.80$, $p = .42$, effect size $r = .09$, respectively.

To determine the association between coping with early external stress and stress spillover over time, the following equation also was estimated at the between-subjects level:

$$\beta_{2j} = \gamma_{20} + \gamma_{21}\,(\text{T1 Stress}) + \gamma_{22}\,(\text{T1 Cognitive Organization}) + \gamma_{23}\,(\text{T1 Stress X T1 Cognitive Organization}) + \mu_{2j} \qquad \text{[Equation 21]}$$

where stress and cognitive organization were grand-mean centered. In this equation, γ_{20} represents an estimate of the average stress spillover effect. γ_{21} represents the association between spouses' Time 1 stress and their stress spillover. Thus, a negative γ_{21} would indicate that spouses with the highest level of stress at Time 1 also experienced the greatest stress spillover over time. γ_{22} represents the association between spouses' Time 1 cognitive organization and their stress spillover. For causality and responsibility attributions, a *negative* γ_{22} would indicate that spouses with the poorest cognitive organization at Time 1 also experienced the greatest stress spillover over time. For differential importance, a *positive* γ_{22} would indicate that spouses with the poorest cognitive organization at Time 1 also experienced the greatest stress spillover over time. γ_{23} captures the association between the interaction of stress and cognitive organization at

Time 1 and stress spillover. Finally, μ_{2j} is the residual variability in stress spillover that remains to be explained after controlling for stress, cognitive organization and the interaction of these two variables. This equation was estimated using each measure of cognitive organization and the significance of the average γ_{23} term was investigated.

Results revealed one significant main effect for husbands. Contrary to expectations, husbands with the most negative responsibility attributions at Time 1 tended to experience the least stress spillover over time, $\gamma_{22} = .02$, $SE = .01$, $t(79) = 2.4$, $p = .02$, effect size $r = .26$. One marginally significant main effect was found for wives. There was a trend for wives with the most negative causality attributions for their partners' negative behavior at Time 1 also to experience the most stress spillover over time, $\gamma_{22} = -.03$, $SE = .02$, $t(79) = -1.9$, $p = .06$, effect size $r = .21$. Turning to the interaction terms, results indicated that the interaction between stress and causality attributions was not significantly associated with stress spillover over time for husbands, $\gamma_{23} = -.002$, $SE = .001$, $t(78) = -.71$, $p = .48$, effect size $r = .08$. However, this interaction was significant for wives, $\gamma_{23} = .005$, $SE = .02$, $t(78) = 2.3$, $p = .02$, effect size $r = .25$. This interaction was plotted using stress scores and causality attribution scores that were one standard deviation below the mean and one standard deviation above the mean. Consistent with the previous results for husbands, attributions tended to play a stronger role under conditions of low stress than under conditions of high stress. As seen in Figure 2, wives who maintained a more positive cognitive organization in the face of low stress at Time 1 (i.e., tended not to see their partners as the cause of their negative behaviors) also experienced less stress spillover over time. Thus, coping well with low stress at Time 1 seemed to have a protective effect on future spillover. However, wives'

Time 1 cognitive organization under conditions of high stress did not have this protective effect. Under high stress, wives, initial coping seemed to have little effect on future stress spillover. Importantly, though there appears to be a significant main effect of Time 1 stress on future spillover, this main effect was not significant. The interaction between responsibility attributions and stress was not significantly associated with stress spillover for husbands or for wives, $\gamma_{23} = .001$, $SE = .002$, $t\,(78) = .34$, $p = .73$, effect size $r = .08$ and $\gamma_{23} = .003$, $SE = .002$, $t\,(78) = 1.3$, $p = .18$, effect size $r = .14$, respectively. Finally, the interaction between stress and differential importance was not significantly associated with stress spillover for husbands or for wives, $\gamma_{23} = .03$, $SE = .16$, $t\,(78) = .18$, $p = .85$, effect size $r = .02$ and $\gamma_{23} = .12$, $SE = .13$, $t\,(78) = .97$, $p = .33$, effect size $r = .11$, respectively. Overall, then, only some support was found for the hypotheses that initial coping is associated with future satisfaction and stress spillover.

Hypotheses 4c: Initial Coping and Future Coping

Hypothesis 4c predicted that successful coping with stress early in the relationship should serve to bolster intimates' ability to successfully cope with stress in the future. In other words, spouses who maintain a positive organization of relationship perceptions in the face of external stress should be even more likely to maintain a positive organization when faced with stress later in the relationship. To address this hypothesis, the following equation was estimated at the between-subjects level using hierarchical regression analyses:

$$\text{T7 Cognitive Organization} = \beta_{0j} + \beta_{1j}\,(\text{T7 Stress}) + \beta_{2j}\,(\text{T1 Stress}) + \beta_{3j}\,(\text{T1 Organization}) + \beta_{4j}\,(\text{T1 Stress X T1 Organization}) + \text{error} \qquad \text{[Equation 22]}$$

This equation was estimated using each measure of cognitive organization.

With regard to causality attributions, results revealed no significant main effects of Time 7 stress on Time 7 causality attributions for husbands or for wives, $\beta_{1j} = -.53$, $SE = .64$, $t(81) = -.84$, $p = .41$, effect size $r = .11$ and $\beta_{1j} = .004$, $SE = .74$, $t(54) = -.06$, $p = .96$, effect size $r = .01$, respectively. A significant main effect of Time 1 stress on Time 7 cognitive organization was found for husbands, $\beta_{2j} = 1.2$, $SE = .48$, $t(54) = 2.4$, $p = .02$, effect size $r = .31$, though not for wives, $\beta_{2j} = .77$, $SE = .49$, $t(54) = 1.6$, $p = .12$, effect size $r = .17$. Thus, husbands experiencing higher stress at Time 1 also exhibited more negative causality attributions at Time 7. Moreover, a significant main effect of Time 1 causality attributions on Time 7 causality attributions for both husbands and wives, $\beta_{3j} = .48$, $SE = .17$, $t(54) = 2.9$, $p = .006$, effect size $r = .21$ and $\beta_{3j} = .49$, $SE = .18$, $t(54) = 2.8$, $p = .007$, effect size $r = .21$, such that spouses with more negative causality attributions at Time 1 also reported more negative causality attributions at Time 7. Contrary to our hypothesis, the interaction between Time 1 causality attributions and Time 1 stress was not significantly associated with Time 7 causality attributions for husbands or for wives, $\beta_{4j} = -.007$, $SE = .05$, $t(52) = -.84$, $p = .40$, effect size $r = .12$ and $\beta_{4j} = -.004$, $SE = .05$, $t(52) = -1.4$, $p = .16$, effect size $r = .19$, respectively.

Turning to responsibility attributions, no main effects on Time 7 responsibility attributions were found for husbands. However, one significant main effect was found for wives. Namely, wives with more negative responsibility attributions at Time 1 also reported more negative responsibility attributions at Time 7, $\beta_{3j} = .49$, $SE = .15$, $t(54) = -3.3$, $p = .002$, effect size $r = .41$. Again, contrary to our predictions, the interaction between Time 1 stress and Time 1 responsibility attributions was not significantly associated with Time 7 responsibility attributions for husbands or for wives, $\beta_{4j} = .005$,

$SE = .06$, $t\,(52) = .83$, $p = .41$, effect size $r = .11$ and $\beta_{4j} = -.004$, $SE = .05$, $t\,(52) = -.89$, $p = .38$, effect size $r = .12$, respectively.

Finally, with regard to differential importance, no main effects on Time 7 differential importance were found for husbands. For wives, however, there was a significant main effect of Time 7 stress on Time 7 differential importance, such that wives reporting more stress at Time 7 also demonstrated a less positive cognitive organization at Time 7, $\beta_{1j} = -.06$, $SE = .03$, $t\,(52) = -2.0$, $p = .05$, effect size $r = .27$. In addition, there was a marginal main effect of Time 1 stress on wives' Time 7 differential importance index, such that wives reporting more stress at Time 1 demonstrated a tendency to maintain a less positive cognitive organization at Time 7, $\beta_{2j} = -.03$, $SE = .02$, $t\,(52) = -1.9$, $p = .06$, effect size $r = .25$. Nevertheless, the interaction between Time 1 stress and Time 1 differential importance was not significantly associated with Time 7 differential importance for husbands or for wives, $\beta_{4j} = -.20$, $SE = .14$, $t\,(50) = -1.4$, $p = .16$, effect size $r = .14$, and $\beta_{4j} = -.13$, $SE = .08$, $t\,(50) = -1.6$, $p = .12$, effect size $r = .22$, respectively. Overall, then, no support was found for the hypothesis that adaptive coping at Time 1 is associated with even better coping at Time 7.

Table 1

Mean of Global Marital Quality and Specific Marital Problem Scores Across Seven Waves of Measurement for Husbands and Wives

Spouse	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7
			Global Marital Satisfaction				
Husbands							
M	96.3	92.0	92.5	92.1	93.5	92.1	91.1
SD	8.8	14.1	14.8	14.7	13.9	15.5	16.9
N	81	76	74	67	64	59	60
Wives							
M	97.7	94.8	93.3	92.1	93.8	90.0	89.1
SD	10.7	12.9	16.0	14.7	15.6	19.4	19.6
N	82	77	73	68	66	61	62
			Inventory of Specific Marital Problems				
Husbands							
M	31.3	30.1	29.7	29.8	29.9	30.4	31.3
SD	16.2	17.1	15.8	17.2	17.3	17.7	20.0
N	82	75	74	67	64	59	60
Wives							
M	29.2	27.8	30.5	29.1	27.4	30.8	31.5
SD	17.3	15.8	18.7	17.1	14.5	18.1	18.7
N	82	76	73	66	66	61	62

Note: For the Inventory of Specific Marital Problems, higher scores indicate a more negative view of the relationship.

Table 2

Mean of Attribution Scores and the Differential Importance Index Across Seven Waves of Measurement for Husbands and Wives

Spouse	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time7
			Causal Attributions				
Husbands							
M	42.9	46.8	45.9	45.2	46.1	44.5	43.5
SD	10.9	10.4	10.5	11.4	10.3	13.2	13.8
N	82	75	64	58	58	53	54
Wives							
M	44.9	45.4	46.3	46.2	45.9	47.3	47.9
SD	9.8	10.2	10.2	10.0	11.3	12.4	11.9
N	82	76	64	63	62	55	55
			Responsibility Attributions				
Husbands							
M	32.8	36.0	35.3	35.5	35.1	35.3	33.0
SD	12.1	12.3	13.0	14.7	13.1	15.7	14.9
N	82	75	64	58	58	53	54
Wives							
M	34.9	35.7	38.2	35.9	36.1	36.1	37.9
SD	14.4	12.7	13.5	14.1	14.4	13.6	16.7
N	82	76	64	63	62	55	55
			Differential Importance Index				
Husbands							
M	.84	.39	.49	.50	.42	.56	.44
SD	.39	.53	.43	.54	.87	.96	.81
N	82	76	64	60	58	52	54
Wives							
M	.82	.87	1.08	.34	.20	.24	.29
SD	.22	.53	.71	.48	.48	.93	.81
N	82	76	64	60	58	52	54

Note: For each of the attribution sub-scales, higher scores indicate a more *negative* cognitive organization. For the differential importance index, higher scores indicate a more *positive* cognitive organization.

Table 3

Mean of Acute Stress Scores Across Seven Waves of Measurement for Husbands and Wives

Spouse	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time7
Husbands							
M	5.2	3.5	3.4	3.3	3.0	2.8	3.2
SD	3.5	2.7	3.0	2.4	2.3	2.6	2.7
Max	17	12	18	10	9	11	10
N	82	76	65	56	57	52	53
Wives							
M	5.5	4.2	4.2	4.0	3.2	3.9	3.8
SD	3.6	3.0	3.7	3.4	2.6	2.8	2.3
Max	18	12	20	14	12	13	9
N	82	76	64	63	61	54	55

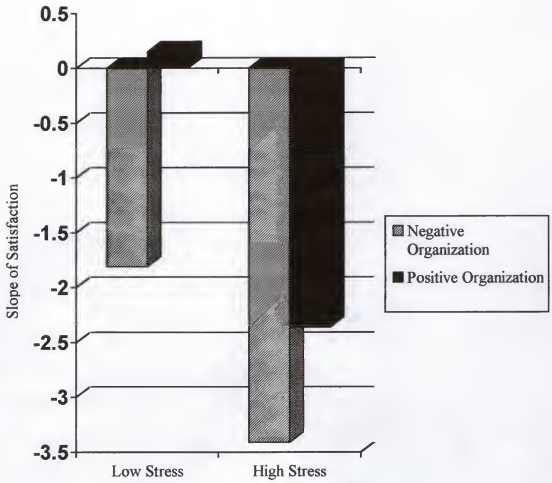

Figure 1. The Interaction of Stress and Responsibility Attributions on the Slope of Satisfaction for Husbands.

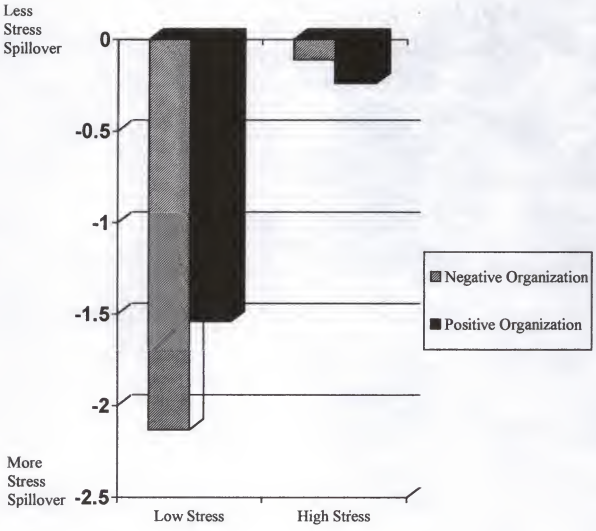

Figure 2. The Interaction of Stress and Causality Attributions on Stress Spillover for Wives.

DISCUSSION

Study Rationale and Summary of Results

Part of maintaining a close relationship over time involves navigating the negative life events external to the relationship, such as work stress or financial stress, that may nevertheless strain the relationship. Understanding change and stability in relationship satisfaction may therefore require an understanding of the broader context in which the relationship is embedded. In fact, ample research has linked the external stressful circumstances surrounding a marriage to relationship outcomes. This research has demonstrated that individuals' stress may have a detrimental effect on their relationship evaluations, a phenomenon known as stress spillover (Tesser & Beach, 1998). Moreover, individuals' stress may have negative consequences for their partners' relationship evaluations, a phenomenon known as stress crossover (Thompson & Bolger, 1999). This dissertation attempted to further our understanding of the association between external stress and relationship quality by addressing three important limitations of the existing stress spillover/crossover literature.

First, the existing literature on stress and relationship quality has failed to investigate the potential mechanisms through which negative external stressors may affect individuals' relationship satisfaction. We predicted that external stress should influence spouses' satisfaction by affecting spouses' specific relationship beliefs, as well as the organization of those beliefs. In other words, the experience of external stressors should provide individuals with more negativity to deal with in the relationship and

affect individuals' ability to subsequently cope with this increase in negative relationship perceptions. The first goal of the study, then, was to examine the role of spouses' cognitive content in the stress spillover process. In pursuit of this goal, Hypothesis 1 stated that external stress should affect spouses' relationship satisfaction through its effects on spouses' specific relationship perceptions. This prediction was supported for wives, though not for husbands. Replicating and expanding previous research on stress spillover, which has demonstrated the effects of stress spillover over the course of several days, the current study found evidence for stress spillover over the first 3 ½ years of marriage. Within-subjects analyses revealed that increases in wives' stress were associated with decreases in their marital satisfaction over time. Moreover, wives' specific relationship perceptions fully mediated this association. Wives' stress was associated with the negativity of wives' specific relationship perceptions, such that as wives' stress increased, they also tended to perceive more specific problems in the relationship. This association seemed to account for the stress spillover effect. Thus, the current findings suggest that one way in which external stress may lead to declines in satisfaction is by increasing the negativity of spouses' cognitive content.

The second goal of the study was to examine the role of spouses' cognitive organization in the stress spillover process. Hypothesis 2 stated that external stress also should affect spouses' relationship satisfaction through its effects on spouses' cognitive organization, controlling for spouses' cognitive content. This hypothesis was partially supported for wives. Specifically, Hypothesis 2 predicted a curvilinear relationship between stress and cognitive organization, such that as stress increased from low to moderate, stress was not expected to interfere with spouses' ability to organize their specific perceptions. Thus, as stress increased from low to moderate, spouses' cognitive

organization was expected to become more relationship-enhancing. However, as stress increased from moderate to high, we predicted that coping with stress would tax intimates' cognitive resources, and therefore interfere with spouses' ability to cope with negative specific perceptions of the relationship. Thus, as stress increased from moderate to high, spouses' cognitive organization was expected to become less relationship-enhancing. Evidence for a curvilinear relationship between stress and cognitive organization was not found on any measure of cognitive organization. However, further analyses provided some evidence for a linear relationship between stress and cognitive organization, such that increases in stress were associated with a less relationship-enhancing cognitive organization. For wives, increases in external stress were associated with an increased tendency to make blaming attributions for a partner's behavioral transgressions over the first years of marriage, even when controlling for the general negativity of wives' specific relationship perceptions. In other words, wives' stress was associated with the nature of their responsibility attributions, independent of wives' cognitive content. Moreover, wives' responsibility attributions fully mediated the stress spillover process. Thus, in line with the second prediction of Hypothesis 2, some evidence indicated that stress may lead to declines in satisfaction by limiting spouses' ability to separate their negative specific relationship perceptions from their global relationship satisfaction.

Overall, then, results revealed modest support for the proposed model suggesting that external stress may affect marital satisfaction through two general routes. First, stress was predicted to affect spouses' specific perceptions of the relationship. In fact, strong support was found for the role of cognitive content in the stress spillover process. Second, stress was predicted to affect the structure of spouses' specific relationship

perceptions. Evidence for the role of cognitive organization in the stress spillover process, though, was somewhat weaker. The current data provided no evidence for the predicted curvilinear relationship between stress and cognitive organization. One reason for the failure to find this predicted association may involve a lack of statistical power. Though the current study measured seven waves of data, only 62 spouses provided data for at least four of the seven time points. Consequently, the current study had low power for detecting a curvilinear relationship. Moreover, though there was respectable between-subjects variability in stress scores, there may have been a restricted range in within-subjects stress scores over time. Reliability analyses across the seven waves of stress data revealed a high Cronbach's alpha ($\alpha = .81$), suggesting that spouses may not have been experiencing much variability in their acute stress between assessments. A sample of spouses experiencing more variability in their stress over time may have revealed the expected curvilinear relationship.

A second reason for the failure to find the predicted curvilinear association may be theoretical. We predicted that under low to moderate levels of external stress, not only would spouses retain the cognitive resources necessary to reorganize their specific perceptions, but also that spouses' cognitive organization actually may become more positive as stress increased from low to moderate. This prediction was based on research demonstrating that cognitive organization effects are strongest when the content of beliefs is somewhat negative (Showers et al., 1998). In other words, in order for spouses to structure their beliefs in a relationship-enhancing manner, they first must hold negative specific perceptions of the relationship. We suggested that under low stress, there would be little negativity in the relationship, resulting in weak cognitive organization effects. This perspective incorrectly assumes that external stress represents the only source of

negative specific relationship perceptions. However, many other factors, such as spouses' enduring vulnerabilities (e.g., neuroticism), may contribute to the experience of negativity in the relationship (Karney & Bradbury, 1995). Even spouses under low stress, then, may have negative relationship perceptions that must be integrated within a generally positive framework of relationship beliefs. Consequently, if negativity is already present in the relationship, spouses' cognitive organization would be unlikely to improve as their stress increased. Rather, increases in stress may simply interfere with spouses' ability to organize their perceptions in a relationship-enhancing manner. The linear relationship between stress and cognitive organization found in the current study supports this alternative conceptualization.

In fact, though a curvilinear relationship was not found, the finding that responsibility attributions mediate the stress spillover effect is encouraging. Previous research has theorized that attributions may play an important role in the stress spillover/crossover process (Tesser & Beach, 1998; Thompson & Bolger, 1999). The current study provides the first empirical evidence suggesting that when individuals may attribute their negative relationship perceptions to an external source, such as the stressful situation, they may limit the association between stress and their overall relationship evaluation. However, high stress seemingly interferes with individuals' ability to maintain positive attributions for negative perceptions, and thus is associated with greater stress spillover. Consequently, the current results suggest that further research on this issue is warranted.

For instance, future research may want to examine the association between stress and other cognitive organizational strategies that may be more central to the stress spillover process. Some research has argued that individuals vary in the complexity with

which they organize their specific relationship beliefs (Murray & Holmes, 1999; Showers & Kevlyn, 1999). In a compartmentalized organization, negative specific beliefs are lumped together and separated from positive specific beliefs. Thus, the activation of any one negative belief may lead to the activation of a flood of negative beliefs, possibly lowering judgments of satisfaction. Conversely, in a complex, integrative organization, negative specific beliefs are linked to positive specific beliefs. Accordingly, the activation of a negative belief will bring to mind other positive beliefs, and thus minimize the influence of the negative belief on judgments of satisfaction. This type of complex organization has been found to buffer individuals from the negative effects of stress (Showers & Kling, 1996). Future research may want to examine whether stress also may limit the complexity with which intimates organize their specific relationship beliefs, thus increasing the likelihood of stress spillover.

A second limitation of the existing literature on stress and relationship quality is the failure to investigate whether the stress of each spouse may interact to influence individuals' relationship satisfaction. In other words, research on stress crossover has examined how spouses' stress may affect their partners' satisfaction without regard for the amount of stress partners may be experiencing themselves. Hypothesis 3 predicted that partners' own stress would moderate the stress crossover effect. This prediction was not supported as the current study failed to find evidence of a stress crossover effect. Namely, changes in wives' stress over the first years of marriage were not associated with changes in their husbands' satisfaction. Similarly, though initial evidence indicated a significant association between husbands' stress and wives' marital satisfaction, this association did not remain significant when controlling for the association between wives' own stress and their satisfaction. In other words, the stress crossover effect found

for wives was not independent of wives' stress spillover effect, indicating that the stress crossover effect simply may have resulted from the correlation between husbands' and wives' stress.

There are two possible reasons why the current study failed to replicate the stress crossover effect. First, the finding that husbands' stress did not have an independent association with wives' satisfaction is not completely surprising given that evidence for stress spillover was not found for husbands. Theories of stress spillover and crossover suggest that individuals' stress should affect their own thoughts and behaviors. This change in individuals' own thoughts and behaviors should result in changes in the thoughts and behaviors of their partners. In other words, to affect the relationship partner, stress must first affect the individual. Consequently, given that husbands' stress was not found to affect their own relationship evaluations, it seems unlikely that husbands' stress would affect the relationship evaluations of their wives. Second, previous research on stress crossover has not examined the effects of stress crossover independent of stress spillover. Thus, the possibility remains that previous findings of stress crossover really are simply further evidence of stress spillover effects. Further research is necessary to determine whether stress crossover effects truly are independent of stress spillover effects.

Finally, the existing literature on stress and relationship quality has failed to examine the long-term effects of stress on relationship satisfaction. Namely, this literature has failed to distinguish why for some couples, stress may be detrimental for the relationship, while for other couples stress may actually lead to enhanced relationship functioning. Hypothesis 4 suggested that spouses who successfully adapt to stress early in the relationship should exhibit resilience to future stressful experiences. Specifically, we

first predicted that spouses who maintained a positive organization of relationship perceptions in the face of external stress would be less vulnerable to declines in relationship satisfaction over time. Some evidence confirmed this prediction. Namely, husbands who adaptively coped with stress by maintaining less blaming attributions of their wives' behavioral transgressions (i.e., a more positive cognitive organization) also tended to maintain more stable satisfaction over time than did husbands who unsuccessfully coped with that stress. In addition, the size of this effect appeared to be larger under conditions of low stress than under conditions of high stress, suggesting that positive attributions may not be as effective in protecting relationship satisfaction when husbands are experiencing high levels of stress.

Second, we predicted that spouses who maintained a positive cognitive organization in the face of external stress would be less vulnerable to future stress spillover. Again, some evidence confirmed this prediction. Wives who maintained a more positive cognitive organization in the face of low stress early in the relationship (i.e., tended not to see their partners as the cause of their negative behaviors) also experienced less stress spillover over time. Thus, coping well with low stress seemed to have a protective effect on future stress spillover. However, consistent with the previous finding, positive attributions seemed to have little effect on future stress spillover under conditions of high stress. Finally, we predicted that adaptive coping early in the relationship would serve to bolster spouses' ability to cope with stress encountered later in the relationship. No support was found for this prediction, as spouses' early coping was not found to be associated with their future coping.

Overall, support for our hypotheses of stress resilience was modest at best. Results were not found consistently across spouses or across measures of cognitive

organization. Nevertheless, when significant results were found, the pattern of results was notably similar. In line with our theory, coping well with low stress (i.e., maintaining positive attributions) did seem to lead to future stress resilience. Moreover, consistent with the idea that high stress may overwhelm spouses' ability to prevent stress from affecting their relationship evaluations, maintaining positive attributions in the face of high stress did little to protect spouses from the adverse affects of stress. In other words, when faced with high external stress, spouses' cognitive organization simply didn't seem to matter as much.

Given this consistent pattern of results, further research on stress resilience seems warranted. In particular, future research may want to examine alternative methods of coping with stress. The current study operationalized successful coping with stress as maintaining a positive cognitive organization. However, given that only modest support was found for an association between stress and cognitive organization, using cognitive organization as a proxy for coping may not have been the best method for examining issues of stress resilience. Rather, the manner in which spouses behave under conditions of stress may have an influence on future susceptibility to stress. Alternatively, future research may want to examine whether individuals who successfully prevent stress spillover early in the relationship are better able to prevent stress spillover over the course of the relationship. For instance, a longitudinal diary study examining the association between stress and satisfaction early in the relationship then again several years later may illuminate the advantages of successful coping.

Strengths and Limitations of the Study

Our confidence in the results of this study is enhanced by a number of strengths in its methodology and design. Foremost among these was the use of within-subjects

analyses to examine the associations between stress and relationship cognitions. Within-subjects analyses allowed for the estimation of the association between changes in stress and changes in relationship cognitions, controlling for spouses' stable tendencies to view their stress and their relationship in a particular manner. Namely, within-subjects analyses allowed us to control for potentially confounding between-subjects variables such as marital satisfaction, stress level, and general negative affectivity, enabling us to limit the possibility that the association between stress and relationship cognitions was the result of these variables. Second, when examining the role of cognitive content and cognitive organization in the stress spillover process, the HLM approach allowed for the estimation of the association between stress and cognitive organization, controlling for the influence of cognitive content, ensuring that these parameters were not confounded. Third, in contrast to prior research that has relied almost exclusively on short-term diary data, the current study used longitudinal data that allowed us to address whether stress and relationship cognitions are associated over the course of the first 3 ½ years of marriage. Fourth, also in contrast to much prior research that has addressed samples varying widely in marital duration, the analyses reported here examine data from a relatively homogeneous sample of couples, reducing the likelihood that the effects observed here result from uncontrolled differences in marital duration. Moreover, the use of a fairly homogeneous sample provided a more conservative test of our hypotheses.

Despite these strengths, several factors nevertheless limit interpretations of the current findings. First, all of the data examined here were correlational. The current paper suggests that spouses' stress should lead to changes in their relationship evaluations. However, these data cannot rule out the alternative perspective that the nature of spouses' marriages may lead to changes in the amount of external stress they

experience. Nevertheless, this interpretation seems less likely for two reasons. First, all of the events listed on our measure of acute stress were chosen to represent stresses that are not likely to be a consequence of marital satisfaction. For instance, whereas being hospitalized or the death of a family member may affect spouses' satisfaction, the reverse is less likely to be true. Second, the majority of the events on the measure represent concrete, objective events. Thus, troubles in the marriage are unlikely to lead spouses to simply perceive more external stress in their lives. In other words, having a bad marriage is unlikely to lead spouses to perceive that they were fired from their job or that their application to school was rejected if these events did not actually occur.

In line with this reasoning, a second limitation of the current study is the use of self-report measures of stress. The use of self-report measures opens up the possibility that third variables may be affecting spouses' views of the relationship as well as spouses' perceptions of stress. For instance, spouses high in neuroticism may exhibit a stable tendency to view their relationship and their stress more negatively, leading to a spurious association between these two variables. Again, the current data cannot rule out the possibility that a third variable, such as neuroticism, may account for the associations between stress and relationship cognitions. However, for reasons mentioned above, this interpretation seems less likely. As mentioned, the use of within-subjects analyses allowed us to partial out spouses' stable tendencies to view their stress and their relationship in a particular manner. Moreover, when measuring stress, the current study did not rely on spouses' subjective ratings of the negativity of the stressful event. Rather, the focus was on whether the spouse reported that the event had occurred. Again, as mentioned, given that the stress measure tended to tap concrete, objective events, it seems unlikely that being high in neuroticism would lead spouses to perceive more external

stressors if those events did not actually occur. Nevertheless, future research may want to examine issues of stress spillover and crossover using objective measures of stress, such as interviewer ratings of stress. The use of objective stress measures may help clarify the directional link between stress and relationship processes.

Though also an important strength of the current research, a third limitation to the current study involves the use of a relatively homogeneous sample of satisfied couples. The current study was limited in the range of satisfaction and stress scores being reported. Thus, generalizations to other samples should be made with caution. For instance, research examining less satisfied couples may find different results that the ones reported here. The newlywed spouses in the current sample likely were motivated to maintain the positivity of their overall satisfaction. For couples that do not have the same motivation to perceive the relationship positively, stress may have an even stronger effect on relationship cognitions. However, the fact that stress was significantly associated with spouses' relationship cognitions even in this sample of uniformly happy couples serves to enhance our confidence in these findings.

Finally, although our sample size compared favorably to other longitudinal studies of marriage, a larger sample size with additional waves of data would have provided greater power to detect additional effects not detected in the current study. For example, in a study with a larger sample size, the interactive effects of spouses' stress on relationship satisfaction may have been significant. In addition, a larger sample may have revealed further evidence of stress resilience. Nevertheless, the fact that several of our predictions were supported, despite the conservative nature of our tests, suggests the current findings are robust.

Marriage as a Safe Haven: The Successful Adaptation to Stress

The current paper argues that stressful circumstances external to the marriage may have detrimental effects on cognitive processes within the marriage. Namely, spouses who are experiencing a lot of stress in their lives also tend to view their relationships in a negative light. Successfully adapting to stress, then, involves preventing that stress from negatively affecting judgments of the relationship, or preventing stress spillover. However, other theorists take a different perspective, arguing that stress may not always lead to negative relationship perceptions. Rather, a good marriage may provide a source of comfort when external circumstances are difficult (Brunstein, Dangelmayer, & Schultheiss, 1996; Coyne & DeLongis, 1986). When faced with a number of stressors, spouses may contrast their marriage against their stressful external circumstances, leading them to view their relationships more positively than ever (cf. Bless & Schwartz, 1998). For instance, a man experiencing stress at work may begin to more fully appreciate the warmth and stability of his marriage. In other words, his marriage may come to represent a "safe haven" from the turmoil and stress he encounters at the office. Thus, in contrast to the stress spillover perspective, which predicts a negative association between stress and marital satisfaction, the safe haven perspective argues that as external stress increases, satisfaction with the marriage may also increase.

Though these two perspectives appear contradictory, the model estimated in the current study could in fact address each of these stress effects. Results indicated that, on average, spouses' stress seemed to spillover into their marriage, as increases in stress were associated with decreases in marital satisfaction. In the current study, significant variability in the strength of this association was not found. However, in a larger study, results may indicate that though stress has negative effects on average, for some, stress

may have a positive association with marital satisfaction. If this is the case, future research may want to examine sources of between-subjects variance for the within-subjects association between stress and marital satisfaction. In other words, what distinguishes those experiencing stress spillover from those for whom the marriage serves as a safe haven from stressful experiences?

One promising answer to this question may be the overall quality of spouses' lives. Spouses who enjoy an overall positive quality of life tend to be less affected by external acute stressors than spouses who are faced with a number of chronic life stressors, such as living in poverty or coping with a long-term illness (Caspi et al., 1987). Perhaps spouses with low chronic stress not only experience less stress spillover, but also are able to rely on the marriage as a safe haven from the experience of acute stress. A second answer to this question may be spouses' trait cognitive complexity. Individuals who define themselves using a greater number of independent self-aspects tend to be less affected by negativity in any one domain than individuals with less complex views of the self (Linville, 1987). In other words, when spouses hold a greater number of differentiated self-aspects, stress in one domain, such as work, tends to be less likely to spill over to affect thoughts and feelings of a different domain, such as the marriage. Again, future research may want to examine whether this type of self-complexity not only limits stress spillover effects, but also allows individuals to compensate for the stress felt in one domain by focusing on other positive self-domains.

Two Routes to Change in Satisfaction: Expanding the Model

The hypotheses of the current paper were based on the idea that there may be two general routes to declines in satisfaction. The first route involves a change in intimates' cognitive content, while the second route involves a change in intimates' cognitive

structure. Throughout this paper, these two routes were discussed as if they were parallel processes. However, future research may want to question this assumption. For instance, there may be a temporal order of the effects of stress on cognitive content and cognitive organization. If evidence of a curvilinear relationship between stress and cognitive organization is found, this could suggest that stress may first affect cognitive content, then affect cognitive structure. Namely, as stress increased from low to moderate, stress would affect spouses' specific perceptions, yet not interfere with the organization of those perceptions. However, as stress continued to increase from moderate to high, stress would then also begin to affect spouses' organizational abilities. However, if further research corroborates that the relationship between stress and organization is linear, this may indicate that the effects of stress on content and on organization are simultaneous.

Similarly, expanding the model even further, there may be a temporal order to the types of cognitive organizational strategies spouses use for coping with negative relationship perceptions (e.g., Robin & Beer, 2001). For instance, when faced with a negative specific perception of a relationship partner, spouses may first attempt to cope with that perception though the use of relationship-enhancing attributions. Viewing the partner as not responsible for a behavioral transgression allows the spouses to separate that negative perception from an overall relationship evaluation, thereby maintaining a positive view of the relationship. This strategy, however, may only be effective when coping with isolated, negative events. Attributions are unlikely to be successful in coping with particularly salient or pervasive negative relationship perceptions that are encountered repeatedly over time. In this case, spouses may need to move to a different coping strategy, such as the use of differential importance. Namely, once it is no longer feasible for a spouse to deny the responsibility of the partner for the negative behavior,

spouses may choose to limit the negativity of the perception by dismissing the importance of the negative act. Thus, our understanding of marital stability may benefit from further investigation of both when and how various cognitive strategies may successfully protect marital satisfaction from the implications of specific negative beliefs.

Additional Directions for Future Research

The current study examined two intervening variables in the stress spillover process: spouses' cognitive content and spouses' cognitive organization. These particular variables were chosen because most factors that shape the development of a relationship exert their influence on future relationship outcomes through their effects on how individuals think about the relationship (Karney, McNulty, & Frye, 2001). However, a variety of other possible intervening variables were not explored in this study. For instance, prior research has established links between stress and negative mood (Bolger, DeLongis, Kessler, & Schilling, 1989) and between stress and negative behaviors (Bolger, DeLongis, Kessler, & Wethington, 1989; Repetti & Wood, 1997). Future research is needed to piece together the large literature on stress and to untangle the causal chains linking each of the potential intervening variables of the stress spillover process. For example, one possibility is that stress may first lead to negative mood, which results in changes in behaviors. These changes in behaviors may then lead to changes in spouses' specific relationship cognitions, which in turn affect spouses' global relationship evaluations. Most likely, however, a number of reciprocal relationships may exist between these variables. Overall, then additional research is necessary to construct a more complete picture of the intervening variables underlying the stress spillover process.

Our understanding of the stress spillover process may also benefit from alternative measurements of spouses' exposure to stressors. The current study examined a composite of spouses' stress across a variety of life domains, such as work, health, and family. Future research may want to consider whether stress spillover may be moderated by the type of stress experienced. For instance, stress experienced within domains considered personally important to the individual may have a larger influence on relationship evaluations than stress in unimportant domains. Thus, if work is more important to an individual than relationships with extended family members, stress at work should be more taxing to the individuals than a stressful family situation. Consequently, a stressful work situation may have a larger impact on the individual's mood, behavior, and relationship cognitions than a stressful family situation. Future research, then, may want to compare whether the same amount of stress encountered in important versus unimportant domains may have different effects on relationship evaluations.

Conclusions

Historically, research on relationship maintenance and deterioration has focused on the effects of intrapersonal factors, such as individuals' personality traits or relationship cognitions, on relationship outcomes. What this perspective overlooks, however, is that the environmental context of the relationship can interact with these intrapersonal factors to affect relationship quality and stability. The current study draws attention to the importance of contextual influences for relationship functioning. In particular, these data complement a growing area of research arguing that spouses' external stressful circumstances can have a detrimental effect on cognitive processes within the relationship. To have a complete understanding of relationship outcomes,

then, researchers and therapists must move beyond the question of how processes within the relationship affect relationship quality to the question of how the factors internal and external to the relationship interact to influence a broad range of close relationship phenomena.

APPENDIX A
SEMANTIC DIFFERENTIAL MEASURE OF MARITAL SATISFACTION

For each of the following items, fill in the circle (O) that best describes HOW YOU FEEL ABOUT YOUR MARRIAGE. Base your responses on your first impressions and immediate feelings about the item.

INTERESTING	O O O O O O O	BORING
BAD	O O O O O O O	GOOD
UNPLEASANT	O O O O O O O	PLEASANT
FULL	O O O O O O O	EMPTY
WEAK	O O O O O O O	STRONG
SATISFIED	O O O O O O O	DISSATISFIED
LONELY	O O O O O O O	FRIENDLY
STURDY	O O O O O O O	FRAGILE
REWARDING	O O O O O O O	DISAPPOINTING
DISCOURAGING	O O O O O O O	HOPEFUL
ENJOYABLE	O O O O O O O	MISERABLE
TENSE	O O O O O O O	RELAXED
STABLE	O O O O O O O	UNSTABLE
HAPPY	O O O O O O O	SAD
STRESSFUL	O O O O O O O	PEACEFUL

APPENDIX B
INVENTORY OF SPECIFIC MARITAL PROBLEMS

All couples experience some difficulties or differences of opinion in their marriage, even if they are only very minor ones. Listed below are a number of issues that might be difficulties in your marriage. For each issue fill in a bubble to indicate how much it is a source of difficulty or disagreement for you and your spouse.

	Not a Problem										Major Problem
	1	2	3	4	5	6	7	8	9	10	11
Children	O	O	O	O	O	O	O	O	O	O	O
Religion	O	O	O	O	O	O	O	O	O	O	O
In-laws, parents, relatives	O	O	O	O	O	O	O	O	O	O	O
Recreation and leisure time	O	O	O	O	O	O	O	O	O	O	O
Communication	O	O	O	O	O	O	O	O	O	O	O
Household management	O	O	O	O	O	O	O	O	O	O	O
Showing Affection	O	O	O	O	O	O	O	O	O	O	O
Making decisions	O	O	O	O	O	O	O	O	O	O	O
Friends	O	O	O	O	O	O	O	O	O	O	O
Unrealistic expectations	O	O	O	O	O	O	O	O	O	O	O
Money management	O	O	O	O	O	O	O	O	O	O	O
Sex	O	O	O	O	O	O	O	O	O	O	O
Jealousy	O	O	O	O	O	O	O	O	O	O	O
Solving problems	O	O	O	O	O	O	O	O	O	O	O
Trust	O	O	O	O	O	O	O	O	O	O	O
Independence	O	O	O	O	O	O	O	O	O	O	O
Drugs and alcohol	O	O	O	O	O	O	O	O	O	O	O
Career decisions	O	O	O	O	O	O	O	O	O	O	O
Amount of time spent together	O	O	O	O	O	O	O	O	O	O	O

APPENDIX C
INVENTORY OF SPECIFIC RELATIONSHIP STANDARDS

Please respond to the following statements, by bubbling in the appropriate circle.

	Is this standard being met?	How upset would you be if it were not met?
	No.....Yes	Not at all.....Very Much
	0 1	1 2 3 4 5
1. My partner and I should have the same ideas about the values we will teach our children (or values in general).	o o	o o o o o
2. My partner and I should have equal say about when we discuss certain positive thoughts and feelings that we have about the relationship.	o o	o o o o o
3. We should spend a lot of time and energy expressing physical affection for each other.	o o	o o o o o
4. We should spend extra money we have for things.	o o	o o o o o
5. My partner and I should have the same ideas about how to spend our leisure time together.	o o	o o o o o
6. My partner and I should have equal say about what kinds of leisure activities we do together.	o o	o o o o o

	Is this standard being met?	How upset would you be if it were not met?
	No.....Yes	Not at all.....Very Much
	0 1	1 2 3 4 5
7. Each of us should put a great deal of effort and energy into developing a good relationship with our partner's friends.	o o	o o o o o
8. My partner and I should have the same ideas about how the housework should be done.	o o	o o o o o
9. My partner and I should have equal say about whether we discuss certain negative thoughts and feelings that we have about our relationship.	o o	o o o o o
10. Each of us should stop what we are doing if the other person wants to discuss positive things	o o	o o o o o
11. We should show our care and commitment to each other by getting together with our partner's family, even if we do not want to.	o o	o o o o o

	Is this standard being met? No.....Yes 0 1	How upset would you be if it were not met? Not at all.....Very Much 1 2 3 4 5
12. My partner and I should value the same qualities in a friend.	o o	o o o o o
13. My partner and I should have equal say about the things we spend our money on.	o o	o o o o o
14. We should make our leisure and fun time together a high priority in our relationship.	o o	o o o o o
15. My partner and I should show interest in each other's leisure activities, as a way of demonstrating that we care about each other.	o o	o o o o o

APPENDIX D
RELATIONSHIP ATTRIBUTIONS MEASURE

This questionnaire describes several things that your spouse might do. Imagine your spouse performing each behavior and then bubble in the number that indicates how much you agree or disagree with each statement, using the following scale:

1	2	3	4	5	6	7
disagree strongly	**disagree**	**disagree somewhat**	**neutral**	**agree somewhat**	**agree**	**agree strongly**

YOUR SPOUSE CRITICIZES SOMETHING YOU SAY:

	1 2 3 4 5 6 7
My spouse's behavior was due to something about him/her (e.g., the type of person he/she is, his/her mood)	O O O O O O O
My spouse's behavior was due to something about me (e.g., the type of person I am, the mood I was in)	O O O O O O O
The reason my spouse criticized me is not likely to change	O O O O O O O
The reason my spouse criticized me is something that affects other areas of our marriage	O O O O O O O
My spouse criticized me on purpose rather than unintentionally	O O O O O O O
My spouse's behavior was motivated by selfish rather than unselfish concerns	O O O O O O O
My spouse deserves to be blamed for criticizing me	O O O O O O O

YOUR SPOUSE BEGINS TO SPEND LESS TIME WITH YOU:

	1 2 3 4 5 6 7
My spouse's behavior was due to something about him/her (e.g., the type of person he/she is, his/her mood)	O O O O O O O
My spouse's behavior was due to something about me (e.g., the type of person I am, the mood I was in)	O O O O O O O
The reason my spouse spent less time with me is not likely to change	O O O O O O O
The reason my spouse spent less time with me is something that affects other areas of our marriage	O O O O O O O
My spouse spent less time with me on purpose rather than unintentionally	O O O O O O O
My spouse's behavior was motivated by selfish rather than unselfish concerns	O O O O O O O
My spouse deserves to be blamed for spending less time with me	O O O O O O O

1	2	3	4	5	6	7
disagree strongly	disagree	disagree somewhat	neutral	agree somewhat	agree	agree strongly

YOUR SPOUSE DOES NOT PAY ATTENTION TO WHAT YOU ARE SAYING:

	1 2 3 4 5 6 7
My spouse's behavior was due to something about him/her (e.g., the type of person he/she is, his/her mood)	O O O O O O O
My spouse's behavior was due to something about me (e.g., the type of person I am, the mood I was in)	O O O O O O O
The reason my spouse did not pay attention to what I was saying is not likely to change	O O O O O O O
The reason my spouse did not pay attention to what I was saying is something that affects other areas of our marriage	O O O O O O O
My spouse did not pay attention to what I was saying on purpose rather than unintentionally	O O O O O O O
My spouse's behavior was motivated by selfish rather than unselfish concerns	O O O O O O O
My spouse deserves to be blamed for not paying attention to me	O O O O O O O

YOUR SPOUSE IS COOL AND DISTANT:

	1 2 3 4 5 6 7
My spouse's behavior was due to something about him/her (e.g., the type of person he/she is, his/her mood)	O O O O O O O
My spouse's behavior was due to something about me (e.g., the type of person I am, the mood I was in)	O O O O O O O
The reason my spouse was cool and distant with me is not likely to change	O O O O O O O
The reason my spouse was cool and distant with me is something that affects other areas of our marriage	O O O O O O O
My spouse was cool and distant with me on purpose rather than unintentionally	O O O O O O O
My spouse's behavior was motivated by selfish rather than unselfish concerns	O O O O O O O
My spouse deserves to be blamed for being cool and distant with me.	O O O O O O O

APPENDIX F

SURVEY OF LIFE EVENTS

For each of the following events, please indicate whether or not the event happened to **YOU (not your spouse) IN THE PAST SIX MONTHS**. If it did happen, please rate the impact of the event, on a scale from –3 (Very negative impact on your life) to +3 (Very positive impact on your life).

	Did it happen?		If the event happened, please rate the impact of the event on your life:						
	Yes	No	-3	-2	-1	0	+1	+2	+3
Relationship									
Separation from spouse due to work or travel	o	o	o	o	o	o	o	o	o
Miscarriage	o	o	o	o	o	o	o	o	o
Difficulties with infertility	o	o	o	o	o	o	o	o	o
Work–related events									
Change in responsibilities at work	o	o	o	o	o	o	o	o	o
Fired or laid off from job	o	o	o	o	o	o	o	o	o
Unemployed (for less than a month)	o	o	o	o	o	o	o	o	o
Unemployed (for a month or more)	o	o	o	o	o	o	o	o	o
New job	o	o	o	o	o	o	o	o	o
Trouble with employer	o	o	o	o	o	o	o	o	o
Trouble with coworkers	o	o	o	o	o	o	o	o	o
Promoted at work	o	o	o	o	o	o	o	o	o
Found out expected promotion would not occur	o	o	o	o	o	o	o	o	o
Demoted	o	o	o	o	o	o	o	o	o

	Did it happen?		If the event happened, please rate the impact of the event on your life:						
	Yes	No	-3	-2	-1	0	+1	+2	+3
School-related events									
Application to school accepted	o	o	o	o	o	o	o	o	o
Application to school rejected	o	o	o	o	o	o	o	o	o
Started school or training program	o	o	o	o	o	o	o	o	o
Changed schools	o	o	o	o	o	o	o	o	o
Completed school or training program	o	o	o	o	o	o	o	o	o
Dropped out of school for academic reasons	o	o	o	o	o	o	o	o	o
Dropped out of school for financial reasons	o	o	o	o	o	o	o	o	o
Major changes in work-load at school	o	o	o	o	o	o	o	o	o
Difficulties with instructor or advisor	o	o	o	o	o	o	o	o	o
Received low grades	o	o	o	o	o	o	o	o	o
Received high grades	o	o	o	o	o	o	o	o	o
Finances									
Financial situation got worse	o	o	o	o	o	o	o	o	o
Took out mortgage or loan ($10,000 or more)	o	o	o	o	o	o	o	o	o
Took out mortgage or loan (less than $10,000)	o	o	o	o	o	o	o	o	o
Started paying off loans	o	o	o	o	o	o	o	o	o
Unexpected expenses	o	o	o	o	o	o	o	o	o
Receive financial help from the government	o	o	o	o	o	o	o	o	o
Lost financial help from the government	o	o	o	o	o	o	o	o	o

	Did it happen?		If the event happened, please rate the impact of the event on your life:						
	Yes	No	-3	-2	-1	0	+1	+2	+3
Family and friends									
Major change in relations with friends	o	o	o	o	o	o	o	o	o
Major change in contact with friends	o	o	o	o	o	o	o	o	o
Major change in relations with family	o	o	o	o	o	o	o	o	o
Major change in contact with family	o	o	o	o	o	o	o	o	o
Friend or relative was in poor health	o	o	o	o	o	o	o	o	o
Parents separated or divorced	o	o	o	o	o	o	o	o	o
Death of close friend	o	o	o	o	o	o	o	o	o
Death of family member	o	o	o	o	o	o	o	o	o
Required to care for friend or family member	o	o	o	o	o	o	o	o	o
Difficulties with in-laws	o	o	o	o	o	o	o	o	o
Health									
Major change in physical health	o	o	o	o	o	o	o	o	o
Minor physical illness	o	o	o	o	o	o	o	o	o
Recurring minor physical illness	o	o	o	o	o	o	o	o	o
Serious physical illness (no hospitalization)	o	o	o	o	o	o	o	o	o
Minor injury or accident	o	o	o	o	o	o	o	o	o
Serious injury or accident	o	o	o	o	o	o	o	o	o
Visit to Emergency Room	o	o	o	o	o	o	o	o	o
Hospitalization (no surgery)	o	o	o	o	o	o	o	o	o
Hospitalization (surgery)	o	o	o	o	o	o	o	o	o
Difficulties with substance abuse	o	o	o	o	o	o	o	o	o

	Did it happen?		If the event happened, please rate the impact of the event on your life:						
	Yes	No	-3	-2	-1	0	+1	+2	+3
Home and Living Situation									
Moved into new home	o	o	o	o	o	o	o	o	o
Moved into new community	o	o	o	o	o	o	o	o	o
Remodeled home	o	o	o	o	o	o	o	o	o
Living in relatives' or others' home	o	o	o	o	o	o	o	o	o
Relatives/others moved into your home	o	o	o	o	o	o	o	o	o
Difficulties with neighbors	o	o	o	o	o	o	o	o	o
Damage/loss of home due to natural disaster	o	o	o	o	o	o	o	o	o
Forced to leave home	o	o	o	o	o	o	o	o	o
Legal									
Involved in a law suit or legal action	o	o	o	o	o	o	o	o	o
Accused of a crime	o	o	o	o	o	o	o	o	o
Arrested	o	o	o	o	o	o	o	o	o
Detention in jail	o	o	o	o	o	o	o	o	o

	Did it happen?		If the event happened, please rate the impact of the event on your life:						
	Yes	No	-3	-2	-1	0	+1	+2	+3
Personal									
Victim of a crime	o	o	o	o	o	o	o	o	o
Involved in an accident (no injuries)	o	o	o	o	o	o	o	o	o
Major change in religious activities	o	o	o	o	o	o	o	o	o
Major decision regarding future	o	o	o	o	o	o	o	o	o
Crisis in community	o	o	o	o	o	o	o	o	o
Loss/damage to important personal belongings	o	o	o	o	o	o	o	o	o

REFERENCES

Bahr, S. J. (1979). The effects of welfare on marital stability and remarriage. *Journal of Marriage and the Family, 41,* 553-560.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,*1173-1182.

Baucom, D. H., Esptein, N., Rankin, L. A., & Burnett, C. K. (1996). Assessing relationship standards: The inventory of specific relationship standards. *Journal of Family Psychology, 10,* 72-88.

Bless, H., & Schwarz, N. (1998). Context effects in political judgment: Assimilation and contrast as a function of categorization processes. *European Journal of Social Psychology, 28,* 159-172.

Bodenmann, G. (1997). The influence of stress and coping on close relationships: A two year-longitudinal study. *Swiss Journal of Psychology, 56,* 156-164.

Bolger, N., DeLongis, A., Kessler, R. C., & Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology, 57,* 808-818.

Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and the Family, 51,* 175-183.

Bradbury, T. N. (1998). *The developmental course of marital dysfunction.* New York: Cambridge University Press.

Bradbury, T. N., Cohan, C. L., & Karney, B. R. (1998). Optimizing longitudinal research for understanding and preventing marital dysfunction. In T. N. Bradbury (Ed.), *The Developmental Course of Marital Dysfunction* (pp.279-311). New York: Cambridge University Press.

Bradbury, T. N. & Fincham, F. D. (1991). A contextual model for advancing the study of marital interaction. In G. J. O. Fletcher & F. D. Fincham (Eds.), *Cognition in close relationships* (pp. 127-147). Hillsdale, NJ: Erlbaum.

Bradbury, T. N. & Fincham, F. D. (1991). A contextual model for advancing the study of marital interaction. In G. J. O. Fletcher & F. D. Fincham (Eds.), *Cognition in close relationships* (pp. 127-147). Hillsdale, NJ: Erlbaum.

Brunstein, J. C., Dangelmayer, G., & Schultheiss, O. C. (1996). Personal goals and social support in close relationships: Effects on relationship mood and marital satisfaction. *Journal of Personality and Social Psychology, 71,* 1006-1019.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods.* Newbury Park: Sage.

Bryk, A. S., Raudenbush, S. W., & Congdon, R. T. (1994). *HLM: Hierarchical linear modelling with the HLM/2L and HLM/3L programs.* Chicago: Scientific Software International.

Bumpass, L. L. (1990). What's happening to the family? Interactions between demographic and institutional change. *Demography, 27,* 483-498.

Caspi, A., Bolger, N., & Eckenrode, J. (1987). Linking person and context in the daily stress process. *Journal of Personality and Social Psychology, 52,* 184-195.

Cherlin, A. J. (1992). *Marriage, divorce, remarriage* (2nd ed.). Cambridge, MA: Harvard University Press.

Cohen, S., Kessler, R. C., & Gordon, L. (1997). Strategies for measuring stress in studies of psychiatric and physical disorders. In S. Cohen, R. C. Kessler, & L. U. Gordon (Eds.), *Measuring stress: A guide for health and social scientists.* (pp. 3-26): New York, NY: Oxford University Press.

Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Personality and Social Psychology, 54,* 454-460.

Crouter, A. C., & Bumpus, M. F. (2001). Linking parents' work stress to children's and adolescents' psychological adjustment. *Current Directions in Psychological Science, 10,* 156-159.

Crouter, A. C., Perry-Jenkins, M., Huston, T. L., & Crawford, D. E. (1989). The influence of work-induced psychological states on behavior at home. *Basic and Applied Social Psychology, 10,* 273-292.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology, 54,* 486-495.

Downey, G., Purdie, V., & Schaffer-Neitz, R. (1999). Anger transmission from mother to child: A comparison of mothers in chronic pain and well mothers. *Journal of Marriage and the Family, 61,* 62-73.

Dunning, D., Meyerowitz, J. A., & Holzberg, A. D. (1989). Ambiguity and self-evaluation: The role of idiosyncratic trait definitions in self-serving assessments of ability. *Journal of Personality and Social Psychology, 57,* 1082-1090.

Fincham, F. D., & Bradbury, T. N. (1992). Assessing attributions in marriage: The Relationship Attribution Measure. *Journal of Personality and Social Psychology, 62,* 457-468.

Geiss, S. K., & O'Leary, K. D. (1981). Therapist ratings of frequency and severity of marital problems. *Journal of Marital and Family Therapy, 7,* 515-520.

Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology, 60,* 509-517.

Hammond, K. R. (2000). *Judgments under stress.* New York: Oxford University Press.

Holahan, C. J., & Moos, R. H. (1990). Life stressors, resistance factors, and improved psychological functioning: An extension of the stress resistance paradigm. *Journal of Personality and Social Psychology, 58,* 909-917.

Holtzworth-Munroe, A., & Jacobson, N. S. (1985). Causal attributions of married couples: when do they search for causes? What do they conclude when they do? *Journal of Personality and Social Psychology, 48,* 1398-1412.

Jacobson, N. S., Schmaling, K. B., & Holtzworth-Munroe, A. (1987). Component analysis of behavioral marital therapy: 2-year follow-up and prediction of relapse. *Journal of Marriage and Family Therapy, 13,* 187-195.

Karney, B. R. & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method, and research. *Psychological Bulletin, 118,* 3-34.

Karney, B. R., & Coombs, R. H. (2000). Memory bias in evaluations of close relationships: Consistency or improvement? *Personality and Social Psychology Bulletin, 26,* 959-970.

Karney, B. R., McNulty, J. K., & Frye, N. E. (2001). A social-cognitive perspective on the maintenance and deterioration of relationship satisfaction. In J.H. Harvey & A.E. Wenzel (Eds.), *Close romantic relationships: Maintenance and enhancement* (pp. 195-214). Mahwah, NJ: Erlbaum.

Knee, C. R. (1998). Implicit theories of relationships: Assessment and prediction of romantic relationship initiation, coping and longevity. *Journal of Personality and Social Psychology, 74,* 360-370.

Krokoff, L. J., Gottman, J. M., & Roy, A. K. (1988). Blue-collar and white-collar marital interaction and communication orientation. *Journal of Social and Personal Relationships, 5,* 201-221.

Larson, R. W., & Almeida, D. M. (1999). Emotional transmission in the daily lives of families: A new paradigm for studying family process. *Journal of Marriage and the Family, 61,* 5-20.

Larson, R. W., & Gillman, S. (1999). Transmission of emotions in the daily interactions of single-mother families. *Journal of Marriage and the Family, 61,* 21-37.

Lavee, Y., McCubbin, H. I., & Olson, D. H. (1987). The effect of stressful life events and transitions on family functioning and well-being. *Journal of Marriage and the Family, 49,* 857-873.

Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology, 52,* 663-676.

Locke, H. J., & Wallace, K. M. (1959). Short marital adjustment prediction tests: Their reliability and validity. *Marriage and Family Living, 21,* 251-255.

Martin, L. L., Seta, J. J., & Crelia, R. A. (1990). Assimilation and contrast as a function of people's willingness and ability to expend effort in forming an impression. *Journal of Personality and Social Psychology, 59,* 27-37.

McCubbin, H. I., & Patterson, J. M. (1983). Family transitions: Adaptation to stress. In H. I. McCubbin & C. R. Figley (Eds.), *Stress and the family: Coping with normative transitions* (Vol. 1, pp. 5-25). New York: Brunner/Mazel.

McNulty, J. K., & Karney, B. R. (2001). Attributions in marriage: Integrating specific and global evaluations of close relationships. *Personality and Social Psychology Bulletin, 27,* 943-955.

Murray, S. L., & Holmes, J. G. (1999). The (mental) ties that bind: Cognitive structures that predict relationship resilience. *Journal of Personality and Social Psychology, 77,* 1228-1244.

Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996). The benefits of positive illusions: Idealization and the construction of satisfaction in close relationships. *Journal of Personality and Social Psychology, 70,* 79-98.

Neff, L. A., & Karney, B. R. (in press). Self-evaluation motives in close relationships: A model of global enhancement and specific verification. To appear in P. Noller & J. A. Feeney (Eds.), *The intricacies of marital interaction.* New York: Plenum.

O'Brien, T. B., & DeLongis, A. (1997). Coping with chronic stress: An interpersonal perspective. In B. H. Gottlieb (Ed.), *Coping with Chronic Stress* (pp. 161-190). New York : Plenum Press.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning.* Urbana: University of Illinois Press.

Pelham, B. W., & Swann, W. B. (1989). From self-conceptions to self-worth: On the sources and structure of global self-esteem. *Journal of Personality and Social Psychology, 57,* 672-680.

Raudenbush, S. W., Brennan, R. T., & Barnett, R. C. (1995). A multivariate hierarchical model for studying psychological change within married couples. *Journal of Family Psychology, 9,* 161-174.

Repetti, R. L. (1989). Effects of daily workload on subsequent behavior during marital interaction: The roles of social withdrawal and spouse support. *Journal of Personality and Social Psychology, 57,* 651-659.

Repetti, R. L., & Wood, J. (1997). Families accommodating to chronic stress: Unintended and unnoticed processes. In B. H. Gottlieb (Ed.), *Coping with chronic stress* (pp. 190-220). New York: Plenum Press.

Robins, R. W. & Beer, J. S. (2001). Positive illusions about the self: Short-term benefits and long-term goals. *Journal of Personality and Social Psychology, 80,* 340-352.

Robinson, E. A., & Jacobson, N. S. (1987). Social learning theory and family psychopathology: A Kantian model in behaviorism? In T. Jacob (Ed.), *Family interaction and psychopathology* (pp. 117-162). New York: Plenum.

Ruvolo, A. P., & Veroff, J. (1997). For better or for worse: Real-ideal discrepancies and the marital well-being of newlyweds. *Journal of Social and Personal Relationships, 14,* 223-242.

Showers, C., Abramson, L., & Hogan, M. (1998). The dynamic self: How the content and structure of the self-concept change with mood. *Journal of Personality and Social Psychology, 75,* 478-493.

Showers, C., & Kevlyn, S. (1999). Organization of knowledge about a relationship partner: Implications for liking and loving. *Journal of Personality and Social Psychology,76,* 958-971.

Showers, C., & Kling, K. C. (1996). Organization of self-knowledge: Implications for recovery from sad mood. *Journal of Personality and Social Psychology, 70,* 578-590.

Tesser, A., & Beach, S. R. H. (1998). Life events, relationship quality, and depression: An investigation of judgment discontinuity in vivo. *Journal of Personality and Social Psychology, 74,* 36-52.

Thompson, A., & Bolger, N. (1999). Emotional transmission in couples under stress. *Journal of Marriage and the Family, 61,* 38-48.

Turner, R. J., & Wheaton, B. (1997). Checklist measurement of stressful life events. In S. Cohen, R. C. Kessler, & L. U. Gordon. (Eds.), *Measuring stress: A guide for health and social scientists.* (pp. 29-58): New York, NY: Oxford University Press.

Whiffen, V. E., & Gotlib, I. H. (1989). Stress and coping in maritally distressed and nondistressed couples. *Journal of Personal and Social Relationships, 6,* 327-344.

BIOGRAPHICAL SKETCH

Lisa Neff graduated *summa cum laude* with a double major in psychology and English from the University of Dayton in 1996. She then received the degree of Master of Arts in general psychology from Wake Forest University in 1998. The following fall, she began her doctorate work in the social psychology program at the University of Florida. While in her doctoral program, Lisa developed a program of research examining the maintenance and deterioration of marital satisfaction under the supervision of Dr. Benjamin Karney. Specifically, Lisa examined how spouses may reconcile a positive global impression of the marriage with the negative specific beliefs and experiences that inevitably arise. Lisa was granted the degree of Doctor of Philosophy from the University of Florida on May 4, 2002. Her dissertation focused on the influence of negative external stressors on relationship processes.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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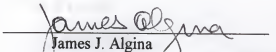

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This dissertation was submitted to the Graduate Faculty of the Department of Psychology in the College of Liberal Arts and Sciences and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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